MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II JANUARY, 1930 NO. 5

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THE STATE BOARD OF HEALTH OF MISSOURI

JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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MISSOURI PUBLIC HEALTH NEWS

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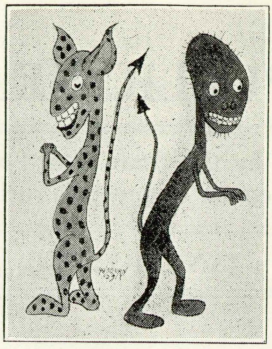
We Wish You Well During 1930



A POPULAR IDEA OF GERMS

THESE GERMS

By

Ross L. Laybourn

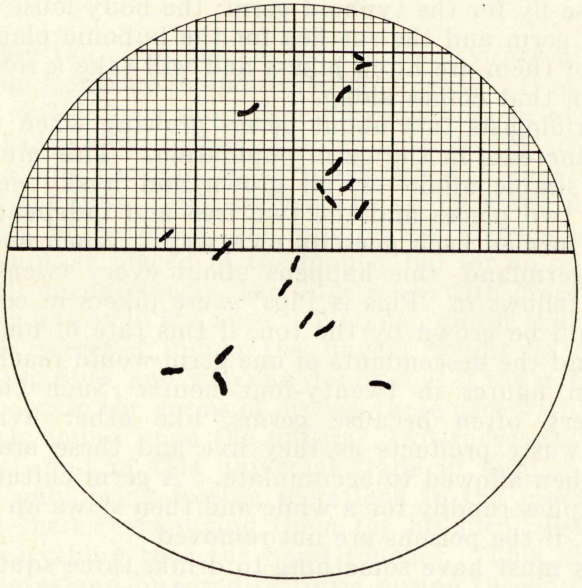
The gangsters of germland and their deeds get the publicity just as our criminals do and since we don't see germs and the well-behaved ones don't break into print, it is perfectly natural to think that the whole outfit are bad actors. But, like most of us who don't make the front page because robbing a bank or killing a man is not in our line, the ordinary germ goes sedately about his own business, trying to make an honest living and causing no trouble. These law-abiding germs spend their time in doing such things as manufacturing vinegar, fertilizing the soil, changing cucumbers into dill pickels and cabbage into sauerkraut, bringing out the flavor of the vanilla bean or retting flax so that it can be woven into linen. If the yeast plant, that little helper who is responsible for the Eighteenth Amendment to our Constitution, were to become extinct, it would be sorely missed by even the most ardent members of the W. C. T. U. and the Anti-Saloon League for there would be no light bread without it. Everything that lived and died would clutter the earth in just the shape that it fell, whether a tree, an elephant, or a field mouse, if the germs did not take a hand in the matter and, by causing decay, change them into chemical compounds that can be used for plant food.

Why pick on the germs and give them a bad name just because they have a few black sheep in the family who get all the publicity? The plants, which we must have to live, have a few black sheep in the family too, such as poison ivy and the poison toadstools, but we don't pass up the whole tribe on that account—we learn to recognize and sidestep the ones that give us a pain and then work the rest of them to the limit. Germs

are plants which are too small to see, but the bandits of this tribe certainly can make themselves felt and so it's up to us to learn how to avoid these bad actors and put the others to work.

Now that we have cleared the fair name of the lowly bacterium, let's study of the black sheep of the family, for we must know something about their size, shape, how they travel, what they need to live, how they go about their nefarious business in our bodies and what the body does about it, if we are going to avoid them.

Germs are so small that it doesn't register any better than the value of a billion dollars when you try to get an idea of their size. Ten thousand tuberculosis germs laid end to end would measure about an inch and it would take about eighty thousand of them to cover the same distance, if laid side by side. Let's try again. A germ is as much smaller than the periods used in the print in this publication than a man is smaller than Pike's Peak.



TUBERCULOSIS GERMS AS SEEN WITH THE MICROSCOPE.
The distance between the light lines is about one twenty-five thousandth of an inch.

What do these pestiferous germs look like anyway? If you go by the cartoons that you see, you will be all wrong. It's a great disappointment to see one of the little villains under the microscope for the first time. Tuberculosis, typhoid and diphtheria germs look like a corn cob or a Frankfurter and the ones that cause abscessed teeth and pus in wounds look like toy baloons. These baloon-shaped germs are strung in chains, like a string of beads, or are grouped in clusters, like a bunch of grapes, depending upon the inclinations of the particular variety

that you are inspecting. The germs that cause epidemic meningitis and catarrh are shapped like coffee beans and come in pairs with the flat sides together. There are a few that are shaped like corkscrews.

Germs do not have wings or legs and must get a lift from other living things to get from place to place and person to person. Father goes down to the basement and gets into an argument with the furnace, uses some of his best Sunday School language, and gets his hands covered with soot in the process. When he comes up stairs, part of his decorations are left on the door knob; brother comes charging through the door, accumulates part of the soot that father left on the knob, rubs his face and then twists sister's ear and she's decorated too. Germs are smaller than the particles of carbon in a smudge of soot and travel in the same way. There are a few aristocratic germs, of course, who have their own highpowered cars or private aeroplanes—the mosquito for the malaria and yellow fever germs; the so-called house fly for the typhoid germ; the body louse for the typhus fever germ and the rat flea for the bubonic plague germ—but most of them are hitch hikers and will take a ride with any living thing that comes along.

Bacteriologists talk about germs growing when they really mean the increase in the germ population. This multiplication is a very simple affair—a full grown and husky germ simply splits into two pieces and the two free and independent germs which are formed each goes its own way. When everything is lovely in germland, this happens about every twenty minutes (the little fellows in "Pigs is Pigs" were pikers in comparison). Germs could be grown by the ton, if this rate of multiplication kept up, and the descendants of one germ would reach a number in fourteen figures in twenty-four hours. Such things don't happen very often because germs, like other living things, throw off waste products as they live and these are poisonous to them when allowed to accumulate. A germ culture in a test tube multiplies rapdily for a while and then slows up and eventually dies, if the poisons are not removed.

Germs must have something to drink, three square meals a day, and a well-heated apartment in order to live and multiply. These needs of the bad actors are only satisfied in the body of the person they move into. They will not live any longer on a book or a door knob than a radish, so when they hitch hike from one person to another, the trip must be short or they will die of starvation or thirst.

These intimate details of the private lives of the germs may have given you the idea that it should be a simple matter to get rid of these little outlaws. Correct, but for the disease carrier. He is usually a victim who has been taken for a ride by the germ gangsters and was too tough to kill. He is now immune to their attacks, but he doesn't throw them out and so these bandits stick around and let him furnish the food, drink and

warmth which they need. He is not a healthy companion for any body who has not had his disease as some of his ambitious germ boarders may decide to change boarding houses and start a new gang fight of their own in their new home. Nearly all people who recover from a "catching disease" are carriers for a while and the germ outlaws continue to sponge off of a few of them for many months or years.

It is sometimes as dangerous to be run into by a microbe as by a trolley car.—Dr. J. J. Walsh.

Probably the chief vehicle for the conveyance of nasal and oral secretion from one to another is the fingers. If one takes the trouble to watch for a short time his neighbors, or even himself, unless he has been particularly trained in such matters, he will be surprised to note the number of times that the fingers go to the mouth and the nose. Not only is the saliva made use of for a great variety of purposes, and numberless articles are for one reason or another placed in the mouth, but for no reason whatever, and all unconsciously, the fingers are with great frequency raised to the lips or to the nose. Who can doubt that if the salivary glands secreted indigo the fingers would be continually stained a deep blue, and who can doubt that if the nasal and oral secretions contain the germs of disease these germs will be almost as constantly found upon the fingers? All successful commerce is reciprocal, and in this universal trade in human saliva the fingers not only bring foreign secretions to the mouth of their owner, but there, exchanging them for his own, distribute the latter to everything that the hand touches. This happens not once but scores and hundred of times during the day's round of the individual . . . . What avails it if the pathogens do die quickly? A fresh supply is furnished each day.—C. V. CHAPIN, "*Sources and Modes of Infection.*"

Personal hygiene is largely a matter of purposeful and intelligent cleanliness.—Walter Frank Cobb, in Graded Outlines in Hygiene.

INDUSTRIAL DEVELOPMENT AND HEALTH HAZARDS

Well planned industrial development is followed by increased population and greater prosperity, and governmental agencies, chambers of commerce, business and local interests are encouraging industrial development throughout the state to a greater extent than ever before. In developing an industrial program in a community, it must be remembered that the problems of health protection and conservation increase proportionately with industrial development and commerce, and that increased health protection must go hand in hand with industrial development if a community is to reap the benefits of the greatest prosperity. While the industries concerned should bear a certain portion of the cost of providing adequate health protection, either through direct donations or taxation, it is only fair and equitable that the local city or county government bear a share of the expense because of the increased economic advantages which they enjoy as a result of such developments. When an industry is approached in a reasonable manner, they usually contribute most generously to the support of a local health organization, but considerable more difficulty is frequently experienced in securing financial participation in health work by the city and county governments who will benefit by local industrial development.

The Union Electric Company is now engaged in the development of what is probably the largest industrial project at the present time in the state, the construction of a hydro-electric plant on the Osage River at Bagnell, Missouri, which will cost approximately $30,000,000. It will require several years to complete the construction of this plant, and during this time the population of the locality will be increased by several thousand workmen. The people who will be directly or indirectly connected with this project will come from all parts of the country and will, undoubtedly, include carriers of diseases which have been practically unknown in this formerly sparsely settled community. These facts coupled with the deplorable sanitary conditions which exist in the locality require drastic action on the part of the government and health authorities to insure both the successful completion of the project and the health and welfare of the adjacent communities.

In November the State Board of Health proposed to the County Courts of Miller, Benton, Camden and Morgan Counties, which will benefit by this project, that a district health service be organized for the entire area. The plan presented included one public health nurse in each county to be paid by the county; one sanitary inspector in each county to be paid by the Union Electric Company, and a full-time medical officer in charge, whose salary and office expense would be paid by the State Board of Health. Such a health organization functioning under the

direction of the State Board of Health will provide a fairly adequate health service for the district under the conditions which will exist. To date, the State Board of Health and the Union Electric Company have pledged themselves to participate in this district health organization. The four counties concerned, failing to realize the menace of the conditions which will exist, and the obligation which they owe to their communities for adequate health protection have procrastinated. The seriousness of the situation must be recognized, as an effective health unit cannot be organized and placed in operation over night. Time is required, and during that period communicable diseases and epidemics of contagion may easily secure a grip on the community which will cause an enormous economic loss, much suffering, and the loss of many lives.

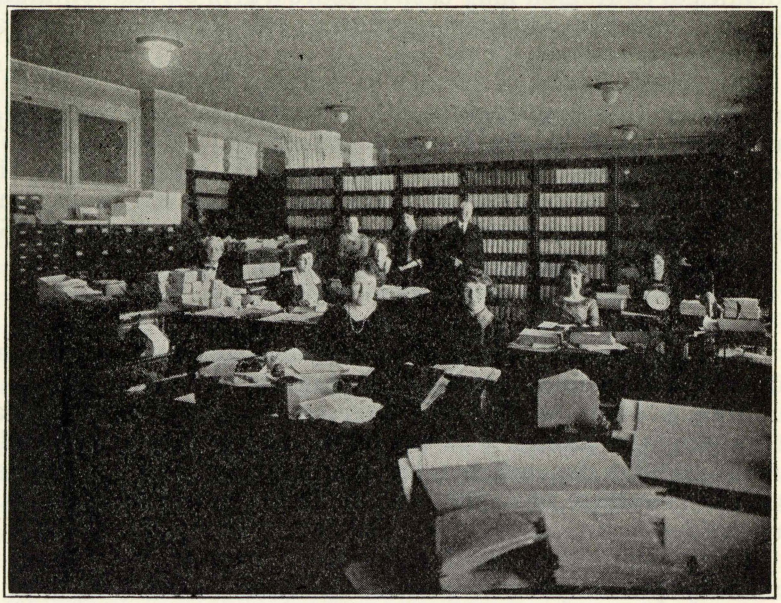
The State Board of Health is putting forth every effort to bring about this proposed health organization and satisfactory health protection in the locality concerned. However, it is a co-operative plan, and the county courts must realize their respective responsibilities, and act without delay in assuming their share of the program before a catastrophe occurs.—W. S. J.

Our standard of living as a people is improving. Greater and greater consideration is being given to the conditions under which we live and work. We have come to realize that in any community the health and welfare of each individual and of each household depends in a large measure on the conditions of health and welfare of every other individual and of every other household.

In the complex life of modern civilization we cannot individually protect ourselves from disease. The danger of infection from the sick and diseased whom we do not see and of whose existence we may be unaware, may be greater than the danger from the sick among those immediately about us. We can protect ourselves from infection from the sick of whom we know, but we are in large measure helpless to protect ourselves from the disease of the sick of whose existence we are in ignorance. Every case of a communicable disease in a community is directly or indirectly a menace to every individual. The welfare of each depends upon the health of the community.—Good Health.

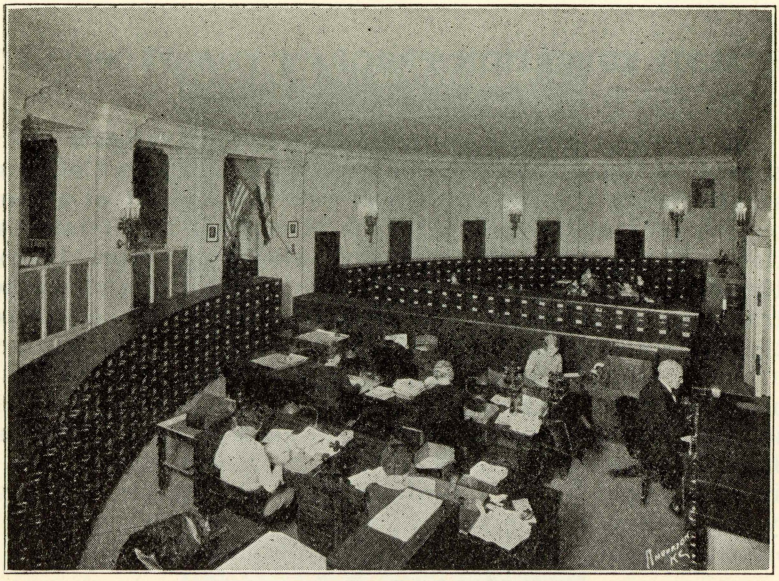
GROWTH OF THE DIVISION OF VITAL STATISTICS

The remarkable increase in the staff of the State Board of Health, and the additional equipment which has been required to efficiently meet the increasing demands made on the department for service during the past four years are graphically illustrated by the accompanying views of the Division of Vital Statistics.



DIVISION OF VITAL STATISTICS IN 1925.

The first illustration shows the offices of the Division in 1925. At that time the birth and death reports, which are permanent records of inestimable value to the citizens of Missouri, both from the standpoint of health and as valuable business documents used in the settlement of estates, the collection of life insurance, and other legal matters, were stored in shoe boxes, wooden files, wooden bookcases, or any other receptacle which could be procured. As a result of this haphazard arrangement, much time was lost in locating records when certified copies were required, and these records were in constant danger of loss by fire or from other causes.



DIVISION OF VITAL STATISTICS IN 1929.

The second picture shows the present quarters and equipment of the Division with its modern steel files arranged in an orderly manner which reduce the time consumed in locating records, and also guarantee a greater degree of safety to these valuable documents. The files shown in this illustration contain only the current records which are in daily use. Older records are housed in a fire-proof vault in the basement of the Capitol Building.—R. L. L.

INSPECTION OF VACCINES AND SERUMS

The United States Public Health Service, in connection with its inspection of biologic products as required by law, performs a service of inestimable value to the general public. Before a biologic product, such as a serum, toxin, vaccine or anti-toxin, may be sold in the United States in interstate or international commerce a license must be obtained from the Public Health Service. The granting of a license means that inspection of the establishment concerned and laboratory examinations of samples of its products are made regularly to insure the observance of safe methods of manufacture, to ascertain freedom from contamination and to determine the purity or safety, or both, of the various products, and the potency in cases where standards exist. From time to time lists of the manufacturing firms which produce such products that are licensed are published, together with the names of the products for which they are licensed. Such a list recently issued by the Public Health Service emphasizes the importance of this work.— *United States Public Health Service.*

A HEALTH EDUCATION PROGRAM FOR PROSPECTIVE TEACHERS

An excellent series of addresses on health subjects will be presented to the students of the five State Teachers Colleges of Missouri during the present school year as a result of a health education program sponsored by the Missouri Tuberculosis Association. These addresses will give the prospective teachers of the state a comprehensive outline of the cause and methods of transmission of disease, the importance of school health work to the welfare and prosperity of the state as well as an enumeration of the official and non-official agencies contributing to the improvement of health conditions in the state and the assistance which they can give the teacher. The speakers selected for these addresses are representatives of various organizations which are actively engaged in the improvement of the public health and they can be depended upon to present the various phases of the subject in a practical and interesting manner.

Six addresses are included in the series:

1. THESE GERMS. A Lecture on Modern Bacteriology and its Relation to Public Health, R. L. Laybourn, State Board of Health Laboratories, Jefferson City.

2. THE STATE HEALTH PROGRAM. The Functions and Activities of the State Board of Health, Mrs. George W. Hoxie, Women's Auxiliary, American Medical Association, Kansas City.

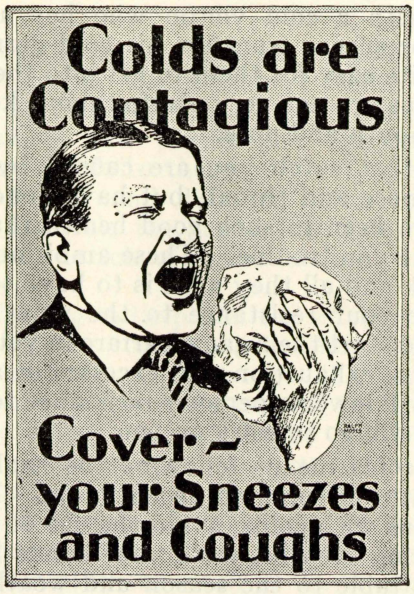
3. WHAT MAY A COMMUNITY EXPECT FROM A WELL ORGANIZED HEALTH PROGRAM? Mr. J. W. Becker, Missouri Tuberculosis Association, St. Louis.

4. THE PARENT - TEACHERS PROGRAM AND WHAT IT MEANS TO PUBLIC HEALTH. Mrs. A. B. McGlothlan, Chairman of the Health Section, Missouri Council of Parents and Teachers, St. Joseph.

5. HOW CAN THE STATE DEPARTMENT OF EDUCATION ASSIST IN THE CONSERVATION OF THE PUBLIC HEALTH? Mr. Henry Deatherage, State Department of Education, Jefferson City.

6. THE ECONOMY OF PUBLIC HEALTH WITH SPECIAL REFERENCE TO THE CHILD. Miss Pearl McIver, R. N., State Board of Health, Jefferson City.—R. L. L.

Intelligence is the most potent factor that can be directed against disease.—F. M. Pottenger.



COLDS

"Oh, it's just a cold," but is it? Many diseases, such as measles, scarlet fever, and whooping cough start with what seems to be a sore throat or cold and this is one reason why people with colds should avoid others so that they will not spread their infections among susceptible people.

There are two kinds of colds—the kind that you catch and the kind that catches you—and both should be avoided, not only because of their cost in lost time, but because a long list of troubles frequently follow a neglected cold. Rheumatism, tuberculosis, heart diseases, sinus infection, infection of the kidneys, and chronic sore throat may have their beginning in a cold any many people whose hearing is impaired can trace their deafness to a cold.

The colds you catch come from the cold victim who coughs and sneezes and sputters near you and he doesn't need to be so very close either, for a good husky, open-mouthed sneeze fills the air with a fine spray of saliva for ten feet in front of the sneezer. Woe be unto the unfortunate recipient of such a shower for, if he draws some of these germ-laden droplets of saliva into his nose or throat in breathing, he has acquired the makings of a first class cold. Of course, coughing, sneezing and sputtering are not the only way in which people catch colds. Using an unwashed glass, fork, or spoon or a towel that has been

used by someone with a cold is a good way to acquire a gang of cold germs. Kissing someone with a cold is a reliable way and shaking hands with a cold victim who has used his hand to muffle a cough or sneeze transfers his cold germs to your hand and it is then quite easy for them to get into the nose and throat because most of us are not very careful about keeping our hands away from our mouth and nose.

The colds that catch you are caused by germs that are already in your nose and throat, but have done you no damage because you have been in such good health that they have not been able to make you trouble. These ambitious germs are anxious to go to work and all they need is to have something happen which will lower your resistance to the point where they can get a foothold and start their gang warfare in your head. Sudden chilling, overwork, exhaustion and excesses of any kind, including overeating, will lower a person's resistance to the point where these cold germs will go to work on you.

Preventing colds means following the health rules and observing the dictates of common decency and cleanliness. Keep away from persons with colds, avoid the use of carelessly washed drinking and eating utensils, wash your hands before eating and wear clothing suitable to the season and weather. Eat moderately of a varied diet, drink two quarts of water daily, exercise in the open air, sleep regular hours with the window open, avoid excesses of work, play and eating.

Out of respect for the wellfare of others, the cold victim should muffle his coughs and sneezes with a handkerchief which is large enough to prevent the spraying of those near by with germ-laden saliva. This practice is dictated, not only by the requirements of cleanliness, but is a matter of common courtesy much more important to the well being of others than many of the courtesies used to show respect and consideration for others, such as the removal of hats by gentlemen in elevators and the surrender of seats to ladies in street cars.

The first day or two are the most important in taking care of a cold and very few serious conditions will develop if cold victims will take proper care of themselves at this time. When your sneezes are so loud that they make the windows rattle, your head stops up, your back and legs ache, and your eyes smart, it is more than time to see your doctor. Take only the medicine he prescribes and go to bed until the symptoms subside. Drink all the water you can and eat such things as broth, milk, green vegetables and fruit. Before retiring for the night, take a hot bath or at least a hot foot bath, then drink hot lemonade and pile on the blankets and sweat it out. Taking care of colds in this way will greatly reduce the death rate from pneumonia.—R. L. L.

SOCIAL HYGIENE

Contributed by Mrs. Robert McE. Schauffler, Chairman Social Hygiene, Missouri Branch National Congress of Parents and Teachers

The object of the social hygiene program of the Missouri Branch of the National Congress of Parents and Teachers is training parents and teachers in the handling of problems of boy-girl relationships and particularly the training of parent in giving the story of life to the pre-school child. The working together of the Parent and Teacher in an understanding relationship makes possible the transition from the home life to the enlarged life of the school easier for both the child and the teacher.

The parent having anticipated the effect of this new world upon the child, the new contact with other children from other types of homes and the inter-change of information, has by scientific and idealistic presentation of facts, immunized the child against the vulgar half truths he will hear, the teacher recognizing this preparation carries on through the natural schedules of the school, the further development. If a child goes to school with a basis of knowledge of the simple facts of life, such as the growth of the embryo in the mother, seed in the plant, etc., it will simplify the work of the teacher in making the application through the nature study and kindred subjects.

Pre-Adolescence.

The Parent-Teacher Study groups are considering the subjects in relation to this aged child, recognizing that the story of life and all the phenomena of nature must be amplified in its application to the daily life in home, school and community. Sympathetic understanding has been maintained since babyhood and the avenue of communication kept open between the parent and the child.

The parent desires a sympathetic and understanding relationship on the part of the teacher of their child, that they may work together for the stabilizing of this life.

Resources available to the Parent and Teacher: Scientific films showing the process of life from the simplest form to human reproduction, health subjects that are the basis in the promotion of a well rounded life. A loan service of literature from the simplest leaflet to the most recent books, from fact to idealism, to aid in creating the right attitudes and a high ambition.

Play is a sacred thing, a divine ordinance for developing in the child a harmonious and healthy organism, and preparing that organism for the commencement of the work of life. —J. G. Holland.

A VISIT TO THE STATE BOARD OF HEALTH LABORATORIES

IV. DETECTING TYPHOID CARRIERS

"There have been fifteen cases of typhoid fever among the patrons of the———Dairy this week." Such was the message that reached the laboratories one day last summer from a city in Northern Missouri. The health officer had prohibited the sale of milk from this dairy, but that did not solve the problem, for the exclusion of this supply from the city caused a serious shortage of milk—one of the best and important of foods when properly produced. The dairyman had to feed his cattle whether he sold his milk or not and so it was up to the laboratories to find the trouble, both for the protection of the people who needed the milk and for the financial relief of the dairyman.

Cows do not have typhoid fever, so where did these typhoid germs come from and how did they get into the milk? The most likely possiblities were a contaminated water supply used in washing the milk utensils or a typhoid carrier handling the milk. In this case, everything pointed to a typhoid carrier and so specimens were examined from all people who had anything to do with the production of this milk supply. Typhoid germs were found in the body discharges of a woman who worked on one of the three farms from which this dairy obtained its milk. The dairyman was then permitted to resume the sale of milk from the other two farms on which there were no typhoid carriers and there was no further trouble.

Such work seems mysterious, for things which we cannot see with our own eyes are always surrounded with mystery, but you find that the laboratory worker considers them very common place and all in the day's work. They were disgusted with the authorities of this town who had waited until they had a milk-borne typhoid epidemic before having their milk handlers examined for the detection of typhoid carriers. They tell you that the "Standard Milk Ordinance," which is sponsored by the State Board of Health and which has been adopted by a great many cities of the state, requires the examination of all milk handlers at regular intervals and that this carrier might have been detected and fifteen cases of typhoid fever and two deaths prevented if the city authorities had believed in prevention instead of cure.

The typhoid carrier is usually a person who has typhoid fever and continues to give off typhoid germs in the body discharges after he has recovered from the disease. A typhoid carrier working around the dairy contaminates the milk or milk utensils with his soiled hands and the typhoid germs grow

luxuriantly in milk. A bottle of milk which originally was contaminated with one or two typhoid germs may contain several hundred by the time it reaches the unsuspecting user, especially, if the milk has stood for any time and has not been kept cold.

Finding the typhoid germ in the body excretions is not as quick and simple a process as is the detection of diphtheria and tuberculosis germs which we have seen on previous visits to the laboratories. The typhoid germ has dozens of cousins which live in the same places and look so much like him that it takes elaborate tests to tell them apart. These cousins vary all the way from the colon bacillus, which is found in the intestines of all animals and does not cause disease, to the dysentery bacillus which is just as bad or worse than the typhoid germ.

In hunting for the typhoid germ, they place a small quantity of the material to be examined on the surface of a jelly-like culture media in a small dish about four inches in diameter and then they spread this material over the surface of the culture media with a sterile glass rod which is shaped very much like a shinney club. After rubbing the surface of the media in the first "plate," they rub the same glass rod over the surface of several other plates so that there will be at least one plate in which the individual germs are well separated from each other. These plates are then placed in the incubator where the temperature is the same as that of the human body and the germs are allowed to grow. They multiply so fast that the next morning the descendants of each germ are so numerous that the groups can be seen with the naked eye. These groups of germs are called "colonies."

In this work, the bacteriologist also uses anilin dyes to simplify his task. A specially treated red dye and some milk sugar is included in the culture media in the plates used. The chemical action of the colon bacillus on the milk sugar in the presence of this red dye colors the colon bacillus colonies a bright red while the typhoid, paratyphoid, and dysentery germs use the milk sugar differently and as a result, these colonies are not colored. Suspicious colonies are transferred from these plates to other culture media and identified by means of their chemical action on sugars and by tests with the blood of people or animals that are known to be immune to typhoid fever.—R. L. L.

The popular attitude of looking upon disease as something inevitable permits disease to continue. Now that we have broken the shackles of traditional ignorance, now that we see clearly that we can be free and how to gain our freedom, it is inconceivable that we shall for many years longer bow beneath this needless and, because needless, quite intolerable burden. —H. W. Hill, M. D.

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THE QUESTION BOX

Questions on public-health subjects which are sent in by readers of *Missouri Public Health News* will be answered under this heading. Address all queries to The Question Box, *Missouri Public Health News*, c/o The State Board of Health, Jefferson City, Mo.

Question; Please explain the difference in the purposes for which diphtheria toxin and diphtheria toxin-antitoxin mixture are used.—Mrs. S. G. N.

Answer: Diphtheria antitoxin is used in treating persons who have diphtheria. It is also used in giving immediate protection to susceptible persons who have been exposed to diphtheria. The protection which it confers is only temporary and does not last for more than two or three weeks.

Diphtheria toxin-antitoxin mixture is used to develop lasting protection against diphtheria and is of no value in treating cases of the disease which have already developed. Three small injections of toxin-antitoxin are given at weekly intervals and it takes several months for the protection to develop after these injections, but when it has once developed, it lasts for from several years to life.

The Schick test is used to show whether or not a person is immune to diphtheria. All persons who have received toxin antitoxin should be given the Schick test six months after the injections of toxin-antitoxin to determine whether this protection against diphtheria has developed, since a person is occasionally found who requires a second series of injections of toxin-antitoxin to give him immunity to diphtheria.—R. L. L.

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COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF NOVEMBER 1928 AND 1929

Disease.	1928	1929
Chickenpox	301	462
Diphtheria	288	382
Epidemic Sore Throat	9	40
Erysipelas	0	1
Influenza	40	54
Malaria	4	32
Measles	202	150
Meningitis	16	30
Mumps	30	36
Pneumonia	33	86
Poliomyelitis	3	3
Rabies	0	10
Scarlet fever	391	545
Smallpox	38	99
Tentanus	1	4
Trachoma	48	24
Tuberculosis	210	251
Typhoid Fever	87	32
Whooping Cough	231	232
Undulant Fever	0	5
Tularaemia	0	3
Ophthalmia	0	2

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MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II FEBRUARY, 1930 NO. 6

Published Monthly by

THE STATE BOARD OF HEALTH OF MISSOURI

JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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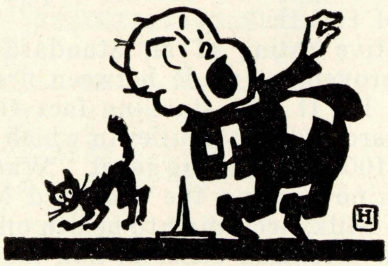


THE POINT IS

Do you wish to receive Missouri Public Health News during 1930? Then be sure your name and address are given correctly on the postal card attached to the cover of this issue and mail it before March first.

Our mailing list is in need of revision and all persons who do not express their desire to continue to receive our bulletin by mailing this card must be dropped from the mailing list on March first.

The Editors.

PROGRESS IN MUNICIPAL MILK SUPPLY SANITATION

Do you want a safe milk supply in your city? The State Board of Health report on the progress in milk sanitation in those cities passing and enforcing its recommended Standard Milk Ordinance shows that in two years' time the average city can improve the quality of its milk supply 129 per cent. Twenty-five cities representing 61 per cent of the population in cities of 2,500 population and over (exclusive of St. Louis and Kansas City) in Missouri are now operating the Standard Milk Ordinance with supervisory assistance from the State Board of Health. The state's program for better milk sanitation is on a co-operative basis; the State Board of Health to render assistance at regular intervals each year, the city to pass and enforce the recommended Standard Milk Ordinance. If you are interested in cleaner and safer milk, have your city officials request assistance from the State Board of Health.

The comparative rating of all Standard Milk Ordinance cities and the improvement made between first and last rating is shown in table I. It is a startling fact that the raw milk rating on all standard ordinance cities in which grades have been announced is 80, 100 representing ideal. Whereas the average rating of six cities not having the Standard Milk Ordinance is 35 (see table II). Milk, according to health officials, is our most essential food, and increased consumption marks a most desirable trend toward better health. Added confidence in the quality of milk produced in standard ordinance cities has increased the consumption 17 per cent over a period of less than two years.

During 1929 sixteen additional cities in Missouri passed and began enforcing the Standard Milk Ordinance due to efforts of the State Board of Health. In the total 25 cities operating under the Standard Milk Ordinance in Missouri, there are 878 dairies producing milk which came under the regular supervision of the Division of Sanitation during 1929. Over 2,100 inspections were made of these dairies in co-operation with the local milk inspectors.

The State Board of Health contends that at least every city of 2,000 to 2,500 population and over in the state should have a safe adequately supervised public milk supply. Having given the present program for improving municipal milk supply sanitation a careful trial for four years, the State Board of Health becomes more optimistic each year over the practicability and effectiveness of this program for securing the desired results. The plan is well tried, thoroughly developed and worked out in detail, no hesitancy is felt in recommending it to those cities in Missouri which are sufficiently progressive to desire adequate control of the quality of their municipal milk supply.

TABLE NO. I—COMPARATIVE RATINGS OF STANDARD MILK ORDINANCE CITIES

City.	Time elapsed since passage milk ordinance.	First rating.		Last rating, 1929.			
		Retail raw milk.	Past. milk.	Retail raw milk.	% Improvement.	Past. milk.	% Improvement.
Ash Grove*	14 Months	26	None sold	69	165	None sold	
Brookfield*	14 Months	17	None sold	66	288	69	.....
Cape Girardeau†	9 Months	44	46	52	18	69	50
Carrollton*	7 Months	32	None sold	82	156	None sold	
Carthage	54 Months	84	40	89	6	None sold	
Centralia*	29 Months	71	None sold	Only one rating made.		.....	Not enforcing.
Chillicothe†	9 Months	46	None sold	No second rating.		.....	No inspector.
Ferguson	6 Months	54	.....	85	57	.....	
Hamilton*†	7 Months	29	24	54	86	None sold	
Hannibal	43 Months	47	40	92	96	93	132
Independence	42 Months	60	No rating	70	17	50	Poor enforcement.
Joplin	41 Months	66	52	92	39	78	50
Kirkwood	12 Months	52	.....	84	62	.....	
Marshall†	6 Months	37	None sold	54	46	None sold	
Monett*†	7 Months	47	None sold	61	30	None sold	
Neosho*†	3 Months	45	33	48	7	29	—12
Republic*†	5 Months	24	None sold	38	58	None sold	
Sedalia	33 Months	77	None sold	91	18	None sold	
Springfield†	9 Months	51	39	55	8	72	85
St. Joseph	12 Months	60	49	71	18	62	27
Trenton†	8 Months	52	34	60	15	29	—15
Webster Groves	8 Months	58	.....	77	33	56	
Moberly	8 Months	No rating	.....	No rating	.....	.....	No inspector.
University City	8 Months	No rating	.....	No rating	.....	.....	
Brentwood	7 Months	No rating	.....	No rating	.....	.....	

*Junior Ordinance towns.
†Last rating made before first grades were announced.

TABLE NO. II—NON-STANDARD ORDINANCE CITIES WHICH WERE RATED IN 1929.

City.	Retail raw milk rating.	Past. rating.
Higginsville	24	
Jefferson City	36	37
Macon	36	
Nevada	31	
St. James	32	
Kirksville	49	45

MAN DIES OF RABIES AS A RESULT OF FOLLOWING THE ADVICE OF FAMILY "DOCTOR BOOK"

As a result of faith in the old family "doctor book" rather than in modern methods of disease prevention, William Dunning, age seventy-six, of Deepwater, died of rabies on January 27. Mr. Dunning, his grandson and a neighbor boy were bitten by a three-months-old pup which showed symptoms of rabies about six weeks previous to Mr. Dunnings' death. All three of these people were advised by physicians to take the antirabic treatment, but Mr. Dunning refused, giving as his reason that old Dr. ————'s book of home remedies stated that rabies was a summer disease and also that it could be prevented by sweating the victim for four hours.

Rabies can be prevented by the use of antirabic (Pasteur treatment) but it cannot be cured after symptoms have developed. This unnecessary death again demonstrates the wisdom of the policy advocated by health officials of recommending that all persons bitten by an animal should receive the antirabic treatment unless it can be proven that it did not have rabies. The only certain way of proving this fact is to shut the animal up and watch it for from twelve to fourteen days. If it is in good health at the end of this time, it did not have rabies and the person who was bitten does not need to take the antirabic treatment. If the suspected animal is rabid, it will develop unmistakable symptoms and die within the two weeks' period and usually death occurs within five or six days. If there is any question as to the cause of death, the head should be sent to the State Board of Health Laboratories for examination. Animals should not be killed and sent to the laboratories at the appearance of the first suspicious symptoms, as it is very difficult to find indications of rabies in the brain of an animal until the disease is well advanced. As a consequence, when people do not follow these instructions and kill a dog as soon as the biting occurs, the laboratories are frequently unable to tell whether it was rabid or not within the time limits of safety for beginning treatment. In such cases, they must inoculate a laboratory animal and wait for it to develop rabies and if this takes more than ten days, the victim must undergo treatment to be on the safe side without being sure that he really needs it.

Contrary to the popular idea, rabies is not a summer disease. Excessive heat and a lack of water do not have anything to do with its development. The disease is transmitted by the introduction into a wound of the saliva of an animal which is suffering from the disease. More cases of rabies of a serious type occur during the cold months than in the summer as is shown by the fact that the State Board of Health Laboratories received fifty-six animal's heads which showed evidence of the

disease during the six cold months of 1929 and thirty-seven during the hot months of the same year.

Bites on the face and neck are the most dangerous, since the disease develops much sooner in such cases than it does when the wound is elsewhere on the body. In these cases, safety depends upon starting the treatment at once and finding out later if the animal had rabies. The treatment may be discontinued if the animal was not rabid, but it may prove fatal to wait for twenty-four hours to find out if it had the disease. Wounds on other parts of the body do not require the haste in beginning treatment that must be used in the case of face and neck bites for it usually takes at least forty days for the disease to develop in these cases, while fourteen days are required to complete the preventive treatment. It is safe to watch the dog for several days to be sure that he has the disease before the treatment is started, but of course, it is not wise to delay treatment too long. Ten days is usually considered the limit of safety for starting treatment.—R. L. L.

INDEX TO VOLUME ONE OF THE MISSOURI PUBLIC HEALTH NEWS ISSUED

An Index to the first volume of Missouri Public Health News is being enclosed with all copies of this issue of the Bulletin which go to libraries. Others desiring copies of this Index may obtain it by writing the editor.

STATE BOARD OF HEALTH ELECTS OFFICERS FOR 1930

Dr. H. S. Gove, of Linn, was elected President of the State Board of Health of Missouri at the meeting of the Board which was held in Jefferson City on January 10. Dr. Francis McCallum was elected Vice-President and Dr. James Stewart was re-elected Secretary.

Rest of body and mind, education in regard to what is safe and what is dangerous, good food and fresh air are the medicines that restore health. Intelligent medical supervision, freedom from care and worry, confidence in recovery, conscientiousness in carrying out every detail given by the physician, work miracles, as thousands can testify who have fallen ill of tuberculosis, but who have fought the good fight and won out.—Dr. Lawrason Brown.

NOT A TASTE IN A CARLOAD

Imagination plays a large part in many of our likes and dislikes and people will defend these imaginary dislikes with greater enthusiasm than when there is actually a noticeable difference in two products. Blindfold tests have a practical use in convincing people that their aversions are imaginary, in addition to their value in filling the coffers of enterprising advertising agencies after endorsements by the current crop of actors and actresses have been worn out.

Health officials are generally agreed that pasteurized milk is safest, but when pasturization is advocated in a community, serious opposition frequently develops among a group of people who claim that the "cooked taste" of pasteurized milk is objectionable. They cling to this contention despite the repeated statement of authorities that properly pasteurized milk cannot be distinguished from raw milk. The New York Health News, published by the New York State Department of Health, recently reported three instances in which some modification of the blindfold test was successfully used to prove that it is impossible to detect a difference between the taste of raw and pasteurized milk.

The first case cited was a dealer in Olean, New York, who "had been an active opponent of pasteurization but early in the course of the serious typhoid fever epidemic which had visited the city he went out on his route one day and discovered that a number of his patrons had gone over to dealers in pasteurized milk. Within twenty-four hours he had decided to take up pasteurization, had ordered equipment and had never had any occasion to regret the change. For a period of about two weeks after he started pasteurizing he was unable to get new bottle caps and continued to deliver his milk with a 'raw' milk cap. The day that his milk arrived for the first time bearing a 'pasteurized' label he began to get protests from his patrons, who said: 'We can't use pasteurized milk; we don't like the taste of it,' etc. When he called their attention to the fact that they had been using pasteurized milk for two weeks without knowing it, most of them were converted."

Another test was at the "annual meeting of the Pennsylvania Association of Dairy and Milk Inspectors which was held at Harrisburg and at an evening banquet, milk was served and each one of the approximately 100 'experts' was asked to drink some of the milk with the understanding that the reason for the request would be explained later. Subsequently ballots were distributed and each one was asked to express an opinion as to whether the milk was raw or pasteurized. After the vote had produced an approximately even division of opinion, it was announced that the milk had been pasteurized at 145 degrees."

"In a certain village in Westchester county, the health officer advocated that pasteurized milk only should be permitted to be sold. Some of the members of the board objected to the idea, contending that pasteurized milk has a peculiar taste. When the board next convened, the health officer put three glasses marked A, B and C before each member. One glass contained raw milk, one pasteurized milk, and the third glass held, in some instances, raw and in others, pasteurized milk.

When the members of the Board had recorded their opinions and a check-up was made, it was found that one was wrong in all three instances, three were wrong two out of three times, while only one was right in two out of three instances."—R. L. L.

"* * * * * the nation that spends money on champagne before it has provided enough milk for its babies, or gives dainty meals to Sealyham terriers and Alsatian wolf hounds and Pekingese dogs whilst the infant mortality rate shows that its children are dying by thousands from insufficient nourishment, is a badly managed, silly, vain, stupid, ignorant nation, and will go to the bad in the long run, no matter how hard it tries to conceal its real condition from itself by counting the pearl necklaces and Pekingese dogs as wealth, and thinking itself three times as rich as before when all pet dogs have litters of six puppies a couple. The only way in which a nation can make itself wealthy and prosperous is by good housekeeping; that is, by providing for its wants in the order of their importance, and allowing no money to be wasted on whims and luxuries until necessities have been thoroughly served."—Bernard Shaw.

It is difficult to measure the direct returns from public health work.

Success in all walks of life, happiness and contentment are dependent to a great extent on individual healthfulness; to a degree individual health is dependent on efficiency in public health efforts.

Public health efficiency affects indirectly the financial and numerical growth of a community, for a city where typhoid fever, smallpox, diphtheria, scarlet fever, infantile paralysis or any other preventable epidemics prevail cannot make rapid progress because people are aware that they can easily find cities in which to live where these dangers are not present or are reduced to a minimum.—Chicago's Health.

PSITTACOSIS

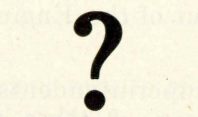
Fatal cases of psittacosis (parrot disease) occurring recently among human beings in widely separated parts of the United States and the embargo placed on the importation of parrots from South America by both the United States and Portugal, as a result of this outbreak have received wide publicity. Psittacosis is not a new disease as has been erroneously stated in some publications, for epidemics in man were reported in Germany, Switzerland and France between 1879 and 1896. Smaller outbreaks have also occurred in France, England, Germany and America in more recent years.

The disease is said to be caused by a germ, Salmonella psittacosis, which belongs to the intestinal group of bacteria. This group includes the organisms of typhoid and para typhoid fevers and food poisoning, as well as the colon bacillus, which is normally present in the intestines of all animals and is not considered a disease producer. Salmonella psittacosis is very closely related to the para typhoid bacteria and produces a highly fatal intestinal disease in parrots which causes symptoms of general debility, loss of appetite, emaciation, and diarrhea, followed in a few days by death in from fifty to ninety-five per cent of the cases. Parrots are very susceptible to psittacosis and one sick bird in an import shipment will infect the rest of the lot at a time which causes them to become ill while being distributed over the country after importation.

The unusual characteristic of this disease is the fact that while it produces abdominal symptoms in birds, it seldom causes similar symptoms in man but takes the form of a pneumonia instead. While the germ is very easily isolated from parrots, most workers have failed to find it in human cases and this fact has resulted in some difference of opinion among bacteriologists as to the true cause of the disease. One group believes that Salmonella psittacosis paves the way for the germs causing pneumonia to gain a foothold in man, while another group holds the opinion that it is not the cause of the disease and that the germ which is really responsible for the trouble and which is associated with Salmonella psittacosis has not yet been discovered. Whatever the truth in the matter may be, the fact remains that human beings do develop the disease following contact with infected parrots and human cases are a serious matter since thirty-four per cent of the cases occurring in past outbreaks have died.

Government health officials regard psittacosis as a curiosity among diseases rather than a serious menace to the health of the country and they feel that there is very little danger of it becoming a wide spread infection. The chief source of danger is the recently imported parrot which is infected and is just developing symptoms of the disease. Persons owning parrots which have

been in their possession for some time have no cause for alarm, as the disease runs a rapid course and has a high mortality and the fact that the bird is alive after a considerable length of time is fairly conclusive evidence that it is not infected.—R. L. L.



THE QUESTION BOX

Questions on public-health subjects which are sent in by readers of *Missouri Public Health News* will be answered under this heading. Address all queries to The Question Box, *Missouri Public Health News*, c/o The State Board of Health, Jefferson City, Mo.

Question: Can cow's milk be tested to find out if the cow has tuberculosis?—Mrs. T. H.

Answer: The examination of milk for the presence of the tubercle bacillus is considered a research test rather than a practical routine test for the detection of cattle suffering from tuberculosis. Failure to find the tubercle bacillus in the milk of an animal does not exclude the possibility of this animal having the disease. This is due to the fact that the germ may not be present in the milk at all times or to the fact that the tubercular infection may be located in some part of the animal's body where it is not possible for them to get into the milk.

The tuberculin test, which any competent veterinarian can make on cattle, is the practical routine test which should be used in detecting tuberculosis in cattle. The State Veterinarian recommends that all cattle should be given this test once a year.—R. L. L.

Tuberculosis is a disease that the child may get from contact with people who have tuberculosis or from drinking the uncooked milk from cows having tuberculosis. Children should have milk only from cows tested for tuberculosis and known to be free from the disease, or milk that has been boiled.—Public Health (Mich.)

MISSOURI WATER AND SEWERAGE CONFERENCE

It will be of interest to the water purification and sewage treatment plant superintendents in Missouri to know that the proposed short course at Missouri University, Columbia, Missouri, has become a reality. This has been accomplished through the interest shown by the superintendents in such a course and the generous co-operation of the Engineering School authorities at the University.

To date nineteen superintendents have signified their intention of attending, four of these from neighboring states. The date of the short course will be February 26, 27 and 28, 1930.

The demand for better trained and better paid personnel in responsible charge of municipal water and sewerage system is increasing each year. This is the day of specialization; the man who really knows water purification and sewage treatment will progress and better remuneration will follow. A superintendent is usually worth what he gets and should not expect an increase until he has improved his knowledge and made himself more valuable to his employer. A water superintendent's watchword must be eternal vigilance relative to the quality and safety of the city water supply. However, the degree of vigilance possible is in direct proportion to the knowledge that a superintendent possesses of the fundamental processes concerned in water purification and his ability to make the necessary tests and keep records. The short course offers an opportunity for the wide-awake superintendent to take advantage of an opportunity for improving his knowledge and better qualifying himself for the position he now holds.

A brief outline of the subjects that the short course will include is given below:

FIRST DAY

Morning

1. Lecture. Outline purpose and method of procedure of school.
2. General lecture on the relationship of water and sewage to health.
3. Lecture. Elements of Bacteriology (as applied particularly to water).

Afternoon

Exercises in water bacteriology (carried on in laboratory).
Sterlization of equipment, media making, and standard bacteriological examination of water samples.

SECOND DAY

Morning

1. Lecture. Simple elements of inorganic chemistry as related particularly to water and sewage treatment.
2. Lecture. Practical application of chemistry to the operation of water purification and sewage treatment plants.

Afternoon

Laboratory exercises.

1. Read bacteriological results of test made first day, and make progressive tests.
2. Making chemical tests important in operation of water purification and sewage treatment plants.

THIRD DAY

Morning

1. Lecture. Biological factors entering into stream pollution and self-purification of streams, also sewage treatment.
2. Lecture. Microscopy and its relation to water supply.

Afternoon

Laboratory exercises.

1. Read bacteriological results and make progressive tests.
2. Demonstration of the application of control tests to plant operation.

Note: All lectures to be mimeographed and distributed. All laboratory procedures to be mimeographed and distributed.

NOTES—MISSOURI WATER AND SEWERAGE CONFERENCE

Plans were approved by the State Board of Health for the construction of the following public water supplies and sewerage systems:

Bismarck—Complete water system, source of supply from deep well.

Sweet Springs—Complete reconstruction of the present water system including two or three deep wells and extensive additions to the piping system.

DeSoto—Complete sewer system and sewage treatment plant.

Mr. J. N. Wells, Superintendent of the Joplin City Water Works, and Mr. W. Scott Johnson, Chief Public Health Engineer, State Board of Health, have been appointed to represent the Missouri Water and Sewerage Conference on the Board of Control of Federation of Sewage Works Associations.

Mr. H. D. Peters, Secretary of the Missouri Water and Sewerage Conference, reports that there are now 97 members in the conference, the largest membership in the five years' history of this organization. The increase in membership for 1929-1930 over the preceding year is 16. The first conference was held in 1925 and a membership of 33 was secured that year. The continuous growth, indicating increasing interest in the Missouri Water and Sewerage Conference, is one of the outstanding factors justifying its existence.

THE FIRST ACTIVATED SLUDGE SEWAGE TREATMENT PLANT IN MISSOURI

A final inspection of the Vandalia sewage treatment plant was made in December, 1929, by engineers of the State Board of Health. This plant, which is the first municipal activated sludge plant in the State of Missouri, was constructed to replace two septic tanks which formerly served Vandalia. The plant consists of a hopper bottom preliminary settling basin, two aeration basins equipped with motor driven mechanical aerators of the Simplex type, a final sedimentation basin equipped with a Dorr clarifier, a sludge digestion chamber which was constructed from one of the septic tanks, two sludge drying beds, and the necessary pumps for handling the activated sludge, and the sludge from the preliminary basin. The pumps and switchboard are located in an attractive brick building. It is planned to provide this building with the necessary apparatus to make tests at this plant in order that a complete record of the results obtained and the cost of operation may be kept. The decision to build the activated sludge plant was reached because a type of plant with minimum odor nuisance was best suited to the location, relatively near a residential section, and because a stable effluent was demanded.

Since urban centers are so far ahead of rural districts in applied sanitation, our big problem today is to improve sanitary conditions in farm homes. When we can make our rural public understand the real value of keeping well and the relative value of applied sanitation, health workers will make greater progress.—J. A. LePrince in Hygeia.

"Public health is the science and art of conscious physical adjustment between man and his surroundings in the universe. It is the science and art of human physical life."—H. W. Hill.

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman Mental Hygiene, Missouri Association of Parents and Teachers

EDUCATING OUR EMOTIONS FOR A CHANGING CIVILIZATION

Children are not born wholly civilized. Civilization is not a disease. Culture is not contagious. No further proof of this is needed than the fact that many humans are practically immune to any form of it. Children, then, acquire what we call civilized behavior. This acquisition of the knowledge, skills, habits, and attitudes, needed for an adequate adjustment to situations in modern life, is no small task.

It is the large formative period that human beings have as compared with other animals that makes this acquisition of "social inheritance" possible. On the strictly intellectual side this is definitely an advantage. But man is more than his intellect. Mind is more than intelligence. In fact, both behavioristic and psychoanalytic studies bring out in bold relief two facts that parents and teachers have shown little awareness of, namely, the dominance of emotions and the "wholeness of life." This implies, (1), that the physical, mental and emotional are inseparably interrelated, interacting parts of the whole—the total personality, and, (2), the "wholeness" of this growth is to a very large extent determined by emotional integrity. And the large formative period which is so distinctly an asset in the learning of school subjects is very frequently distinctly a disadvantage as far as the education of one's emotions is concerned. For it is the very largeness of the period that makes possible the very undesirable acquisition of emotional aberrations—peculiarities of behavior and, at worst, mental disease.

The remedy is, of course, prevention before the acquisition, rather than an attempted cure afterwards. Hence the all importance of the question: How should parents or teachers behave when their children misbehave? The following ten commandments are furnished to serve merely as "cues" to behavior and are intended to stimulate further study, not serve as a substitute for it:

1. Don't blame heredity. Heredity as an all explanatory mechanism for human behavior is a fiction.
2. Don't blame environment. Environment as an all explanatory concept for human behavior is also a fiction. Reality is not "heredity" or "environment" but a growing organism developing in changing environments.

3. Don't take over all responsibility from the child. Mother and teacher abuse their authority when they inhibit the development of individuality. Independence, not everlasting dependence is the goal.
4. Don't judge the needs of the child by the trouble he causes you.
5. Don't handle symptoms.
6. Don't get mad yourself.
7. Don't get easily shocked. Cherish a sense of humor. A person who gets easily shocked is one who is immature or intolerant.
8. Don't be addicted to cure-alls. They do not exist.
9. Don't expect miracles. No one but individuals from the "intellectual underworld" will promise you to make a genius from a dullard by exploding the "unconscious ideas," by "visualization" or some other form of psychology gold brick.
10. Don't make unfavorable comparisons. Every child wants security and a "calculable future." Democracy does not mean equality of general ability or special aptitudes, of possessions or social standing. It means no more than an equal right to happiness and the requirements for it vary with individuals. The need, therefore, is not for the furnishing of knowledge in a way that inhibits individual growth, but is for the application of liberated intelligence of the teacher or parent in the setting up of situations that makes the acquisition of mental health, as well as knowledge, possible.

H. MELTZER, Ph. D.,
Psychologist, Psychiatric Clinic,
and Lecturer, Washington University, St. Louis.

When parents have "a nervous child," it is often a good sign that the parents need to go to see the doctor even more than does the child. Parents are as often the cause of many difficulties in the child's health and behavior as is the child himself.—Dr. LeRoy A. Wilkes.

Therefore, when we build, let us think that we build—forever. Let it not be for present use alone, let it be such work as our descendents will thank us for, and let us think, as we lay stone on stone, that a time is to come when those stones will be held sacred because our hands have touched them and that men will say as they look upon the labor and the wrought substance of them, "See! this our fathers did for us."—John Ruskin.

SOCIAL HYGIENE

Contributed by Mrs. Robert McE. Schauffler, Chairman Social Hygiene, Missouri Branch National Congress of Parents and Teachers

ADOLESCENCE

The adolescent child presents a new problem. "Adolescence, that period of life which is a heaven and hell experience which so few adults understand. At one moment the child is swept to the height of joy, enthusiasm and hope, and the next moment is plunged to the depth of despair and self-depreciation. We are all familiar with the changes of the physical body of the child which turns from the little, soft muscleless neuter being into the adolescent boy or girl, but few of us are familiar with the emotional changes and the intellectual changes which are taking place in the personality of the child. The glands of his body are pouring into the blood, new thrilling substance; they call it sex impulse, but do not confuse the word sex with sensual. They are not the same at all. This normal sex impulse is composed of many attributes, idealism, awakening to the beauty of life, the color of life, love, hope, ambition.

Instead of the parent teasing the boy when first attracted to the little girl, or the teacher assuming an untoward frowing attitude of suppression when she sees a group of boys conversing with a girl school mate on the play ground, let them capitalize this newly awakened pride in self, this desire to appear well in their group. Let them direct this newly awakened interest into channels of achievement. If they can do this, they have a Niagara of Horse Power.

What parents and teachers need to do is to lead and direct the adolescent child, to help them realize some of the changes and ideals that are in them. The teacher has right at her hand, a wealth of literature which presents human love and life in terms of chivalry, idealism and honor. They must invite beauty and love and understanding of the adolescent child. The adolescent child does not react normally to his environment, and in this connection I would call your attention to the increasing number of adolescent suicides. A harsh or bitter word which to the preadolescent child would mean a sulking fit, and to the post-adolescent child, "just get mad and walk out," is a tragedy to the adolescent. He does not react normally and I would leave you with this message: No one was ever too patient, too loving, too understanding of the adolescent child. It cannot be done.

OF PUBLIC HEALTH INTEREST

A permanent organization, known as the Missouri State Child Health Council, was organized at a meeting of the representatives of state organizations interested in child health which was held in the offices of the State Board of Health on January 31st. The purposes of this council is to coordinate child health work in the state, advise with the division of Child Hygiene of the State Board of Health in perfecting plans for the observance of May Day—National Child Health Day—and to assist in carrying out the recommendations of President Hoover's White House Conference on child hygiene. The names of the officers and chairmen of standing committees were not available at the time that this bulletin went to press.

On Monday, January the 20th, nineteen health workers from Jackson, Buchanan, Nodaway, Carroll and Atchison counties met in Kansas City for a conference with Drs. Stewart, Krause and Petty and Miss McIver of the State Board of Health. Various topics for discussion were suggested by the nurses and health officers and much time was spent on advisability of following up the toxin-antitoxin clinics with Schick clinics. Following the two-hour conference in the morning, the group had luncheon together at the Hotel President, and then the afternoon was spent in individual conferences. The regional meetings will be a regular feature of the administrative program in the future, and it is hoped that much help may be derived from these smaller group conferences.

The St. Louis County Health Department has just secured an appropriation for two additional county nurses. This will make seven public health nurses in the department, and with the county divided into districts, with one nurse assigned to each district, a splendid health program should be the result.

Two counties, Saline and Lafayette, are considering the establishment of whole time county health departments. Both of these counties have had county nursing services and it is logical that as a result of these demonstrations they should be considering a more adequate health program.

In 1930 Six and Nine Point buttons and the Blue Ribbons are now available. The State Board of Health has decided to distribute the buttons according to the calendar year instead of beginning on May Day as heretofore.

COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF NOVEMBER, 1928 AND 1929

Disease	1928	1929
Chickenpox	683	396
Diphtheria	340	207
Epidemic Sore Throat	13	18
Erysipelas	1	1
Influenza	16730	88
Malaria	3	1
Measles	408	207
Meningitis	56	55
Mumps	67	55
Ophthalmia	0	1
Pneumonia	221	106
Rabies in animals	2	11
Scarlet fever	408	420
Smallpox	137	146
Tetanus	4	1
Trachoma	26	29
Tuberculosis	194	151
Typhoid fever	31	23
Whooping cough	261	94
Tularaemia	0	8
Undulant fever	0	5

MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II MARCH, 1930 NO. 7

Sixth Annual Meeting of the

Missouri Public Health Association

JEFFERSON CITY

APRIL 22, 23, 24, AND 25, 1930

Published Monthly by

THE STATE BOARD OF HEALTH OF MISSOURI

JAMES STEWART, M. D.
State Health Commissioner
JEFFERSON CITY, MISSOURI

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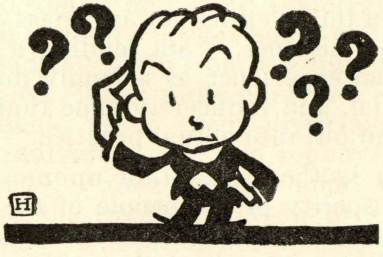

WAS IT MAILED?

That yellow card that signifies your desire to receive Missouri Public Health News each Month. Because of unavoidable delay in mailing the February issue, the revised mailing list will be used for the first time in sending out the April issue. If you want to receive this publication and cannot locate the post card, write us a letter.

The Editors.

THE FAMILY PHYSICIAN*

James Stewart, M. D.
State Health Commissioner

During the past three months I have endeavored to give to my radio audiences some of the essential factors which would be of value to the public in general in combating diseases to which the human body is susceptible. It has been impossible, of course, to go into detail as to the methods of controlling contagion, but I have endeavored to give you some of the standard methods recommended by the State Board of Health in combating some of the more common preventable diseases. I hope that my efforts have been of value to all my listeners. This evening concludes a series of radio addresses which, through the courtesy of WOS I have given once each week since the first part of December, and at this time I am going to talk to you on a subject which is very near to my heart—"The Family Physician." I am talking to you this evening not as a mass audience in general but to you, Friend Listener, I am sending a personal message. I am speaking from experience as a family doctor and also as a public health official, and I sincerely hope that my final message will be received and put into actual practice.

Public health is the foundation upon which depends the happiness and prosperity of the people of the state and nation. It is, in fact, our greatest national asset. The American people as a rule do not enter into the conservation of health and the prevention of disease with the same enthusiasm and wholeheartedness that characterize our individual and commercial life. We are engaged largely in treating symptoms rather than in fighting disease; in dealing with the results of ill health rather than the prevention of illness. We undertake to dam the stream at its mouth rather than to control the flow of disease at its source. In all the campaigns that are being waged, it matters not for what purpose, the fight against disease is the most important. It affects all ages and economic conditions; personal behavior and environment. Advancement in civilization depends on the growth of physical and intellectual power unhampered by disease or physical defects.

For many years public health organizations supported by public funds or endowments have made great progress in health education, as a result of which we have experienced a marked reduction in death rates from preventable causes, and a decided increase in the span of human life and usefulness. However, the work has just begun, and the accomplishments which the future holds may exceed our fondest dreams.

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*Broadcast over Station WOS, February 26, 1930.

The front lines of defense is and always has been the family doctor. He is the sentinel who sends back the first words of warning of an impending enemy to health. His intimate contact with the family among whom he works arms him with first-hand information and makes him, through his training, the most valuable asset to his community in the warfare against disease. Those people who have lost contact with the family physician are depriving themselves of the most important means of insuring health protection. It is true that many life insurance companies offer health examinations and through such means have reduced their annual death claims. Several hundred local health analysis institutes have sprung up in the past few years, some of which are giving excellent service, but none can compare with the competent services of your family physician who knows you in health as well as when something abnormal develops. You are warned to beware of advertising quacks who promise to work wonders and guarantee cures, but are only interested in the fee, which they usually demand in advance. They are in your neighborhood today and gone tomorrow, usually leaving behind them a trail of empty pocket books and uncured ailments. You are also warned to refrain from the use of patent medicines in so far as possible. When individuals are in need of medical treatment they should go to their physician, as every person who is sick is an individual case and requires individual study. Medicine prescribed for one person should never be used by another member of the family or given to a neighbor. When you are sick, consult your physician and not your druggist, as many times prescribing will only mask the symptoms of the disease, making it more difficult for the physician to diagnose. You will find it cheaper in the long run to consult your physician first. Beware also of itinerant spectacle venders who promise to correct all defects of vision with glasses. Many abnormal conditions develop in which the eye symptoms are valuable in the diagnosis, but are not recognized by spectacle peddlers, such as cataracts, beginning paresis, and many other conditions.

Upon locating in a community, one of the first things the head of the family should do is to select a reputable physician for his family doctor. It is important that the physician know the family and the sanitary and social environment in health, so that he may be able to quickly recognize any sickness that might occur. Make your doctor your confidential friend, and thank heaven that he lives not so far away as in days gone by when there were no telephones nor all-weather roads. It is true that this is an age of specialists, and many abnormal conditions and defects will be found where the services of a specialist will be needed. In this case also, your family physician will be your best guide. It is advisable to have a periodic physical examination. We overhaul machinery, inspect automobiles, watches and elevators at regular intervals. Is it not just as

logical to inspect the human machinery every few months, or at least once a year? I am more impressed each day with the thought that most of our serious illnesses are due to a neglect of conditions which are easily remedied if discovered early. Prevention is infinitely more important than treatment. Why not resolve today to put your body in good order?

Let us consider for a moment the physician's side of the case and what incentives there are to induce him to become more interested and active in preventive work. There are many which may occur to you, but the most important, in my opinion, is the opportunity to serve humanity. This appeal has never been made in vain to a good physician. The second incentive is remuneration, and the third is the ever-increasing demand for an annual physical examination as a result of educational campaigns by boards of health, and the very marked reduction in death rates from preventable causes. Among the diseases that can be prevented are smallpox, diphtheria, typhoid fever, rheumatism, chronic diseases of the kidneys, arteries, heart, and many others. An early diagnosis will save many lives that otherwise would be sacrificed as a result of the scourge of cancer. Every child should be immunized against diphtheria at six months of age, and vaccinated to prevent smallpox by the time he is one year old. One of the important means of preventing disease is to watch the kidneys.

One of the most serviceable tests in aiding a physician to make a diagnosis is a complete urinalysis done by either your family physician or a laboratory to which he refers his work. He will render you more valuable service than you will receive by sending samples to unauthorized laboratories.

The kidneys are closely related to the circulation, hence we find changes in their excretions as a result of infections, anemia, and heart affections. However, a complete physical examination is the only sure means of arriving at a definite diagnosis.

It is well to remember that chronic changes in the heart, blood vessels and kidneys may develop even to an advanced degree before manifesting their presence by symptoms of which the individual is conscious, thus the necessity of periodic physical examinations.

In many instances the practicing physician can well afford to co-operate with the practicing veterinarian and likewise urge such co-operation on the part of his patient. As a little illustration or two, we shall assume that a case of undulant fever is diagnosed in the home of a farmer. In order to prevent further spread of the disease in the family and in the community, it would be well for the physician to suggest that a veterinarian be employed to make an examination of the cattle, draw blood samples and send them to a laboratory. In that way learning the exact status of the herd from which the family milk supply was obtained.

The same rule could apply in the case of tuberculosis. We must not overlook the fact that many human diseases have their origin in domestic animals. When these diseases are encountered the family physician who advises his patients to consult the veterinarian in order to see if such diseases have actually originated in some of the livestock on the premises is pursuing a wise policy. Such a course is particularly advisable in case of a bite inflicted by a suspicious dog. The dog should be placed under the observation of a competent veterinarian, simply because he has received special training in the diagnosis of diseases of domestic animals and, if not, ought to be in a better position to make a more accurate diagnosis in animals than is the average practicing physician.

In conclusion, I wish to say, don't forget your dentist. It is well to visit him at least twice a year and have your teeth examined. Many illnesses are caused by decayed teeth. The necessity for wearing "store" teeth would soon be a thing of the past if all teeth defects were taken care of in time.

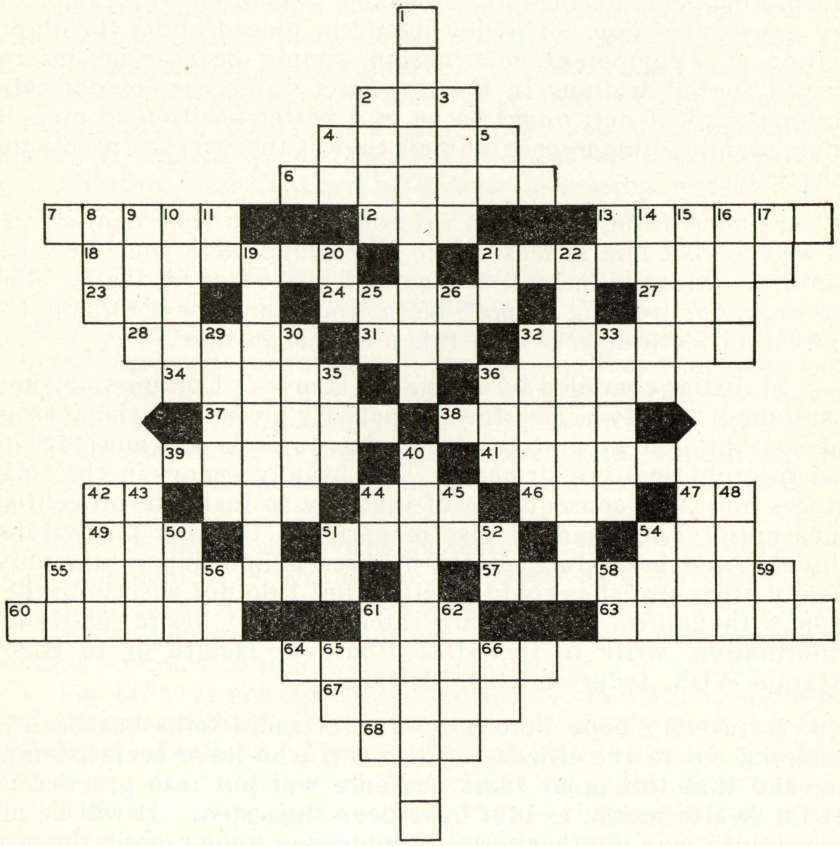
Statistics compiled by President Hoover's Commission show that about twenty years of useful activity are lost by the average person through premature death due to lack of knowledge of existing physical impairment. This usually occurs in the early stages and as a consequence of inability to institute preventive measures. The financial loss of earnings through preventable diseases and premature deaths is three billion dollars annually. Many other statistics could be cited, but I do not wish to burden you with figures. If you are interested and desire additional information, write to the State Board of Health or to Radio Station WOS, Jefferson City, Missouri.

I sincerely hope that this series of radio talks has been of material aid to the citizens of Missouri who have been listening in, and that this great radio audience will put into practice all of the health measures that have been suggested. It will be my purpose to give another series of addresses some time in the near future, and I shall appreciate your comments and suggestions as to what subjects are of most interest to you. I wish to take this opportunity to again thank you for your kind indulgence and co-operation.

Bodily health brings its own reward—the thrill of vigor, the light step, the enjoyment of endurance, the readiness for adventure; but it also brings the higher happiness of a clear head, with an appetite for good intellectual fare; it means some capacity for enjoying the good things of life—the sunshine, the open air, the country, the birds and flowers; it also means some surplus energy to spare for one's friends.—J. Arthur Thompson.

A SIX-POINT HEALTH PUZZLE

EDITOR'S NOTE: The Greene County Health Department prepares a monthly news letter which is sent to all the schools of the county. Miss Ida Gutschke, one of the county nurses, puts much thought and originality into the preparation of these letters and always includes a health puzzle or riddle in each letter. This cross-word puzzle appeared in the December issue and taxed the ingenuity of many of the teachers as well as the pupils.



HORIZONTAL.

2. Food used for meat.
4. Chinese coins.
6. One of the six health points.
7. One of the six health points.
12. Girl's cap.
13. One of the six health points.
18. Levelers.
21. Slumberers.
23. Lexington (abbr.).
24. Contagious catarrhs.
27. Is (plural).
28. Grass cloth plant.
31. A pronoun contraction.
32. Transgressed.
34. Cause diseases.
36. A country in Asia.
37. Crisis of a disease.
38. Freezing rain.
39. Foreign.
41. A citrus fruit.
42. Spanish (abbr.).
44. Wing.
46. Rhode Island News (abbr.).
47. Street (abbr.).
49. Labrador.
51. Postpones.
54. Rhode Island History (abbr.).
55. Treacle.
57. Illness.
60. One of the six health points.
61. Sun.
63. One of the six health poits.
64. One of the six health points
67. Mud.
68. Point of compass.

VERTICAL.

1. Garden plants.
3. Moody.
4. Toward.
5. Sister (abbr.).
8. A fish.
9. Always.
10. A state (misspelled).
11. Health Nurse (abbr.).
14. A tooth paste.
15. Harden.
16. Angered.
17. Bone (Latin).
18. Activities for health.
20. A state (abbr.).
21. Half (abbr.).
22. Many attacked by a disease at the same time.
25. An exclamation.
26. Doctor of Science (abbr.).
29. Repasts.
30. An ant
32. Scoff.
33. Radium emanation.
35. Japanese coin.
36. Sick.
40. Extracts.
42. Small, bitter plum (misspelled).
43. Play a lively game (abbr.).
44. Place.
45. Yes.
47. Study in school regularly (abbr.).
48. Theodore (abbr.).
50. Disgust (interj.).
51. Sunday School (abbr.).
52. A state (abbr.).
54. A cheer.
55. A pronoun.
56. Strait (abbr.).
58. And (Latin).
59. A continent (abbr.)
61. Market.
62. Mineral in milk.
65. Suffix used to form plural.
66. Point of compass.

SMALLPOX VACCINATION

EDITOR'S NOTE: Smallpox is excessively prevalent in Missouri at the present time and as a consequence large numbers of the citizens of the state are being vaccinated. Because of the many requests which have been received by the State Board of Health for a description of the "multiple pressure" method of vaccination, the following article, which appeared in the December, 1928, issue of Missouri Public Health News, is reprinted for the information of all concerned.

Four things are necessary for a successful and satisfactory smallpox vaccination, according to an article by Dr. J. P. Leake of the U. S. Public Health Service, which appeared in "Public Health Reports." These are the use of fresh vaccine of full strength, cleanliness, restriction of the vaccination to the smallest possible area and keeping the site of the vaccination clean and dry at all times.

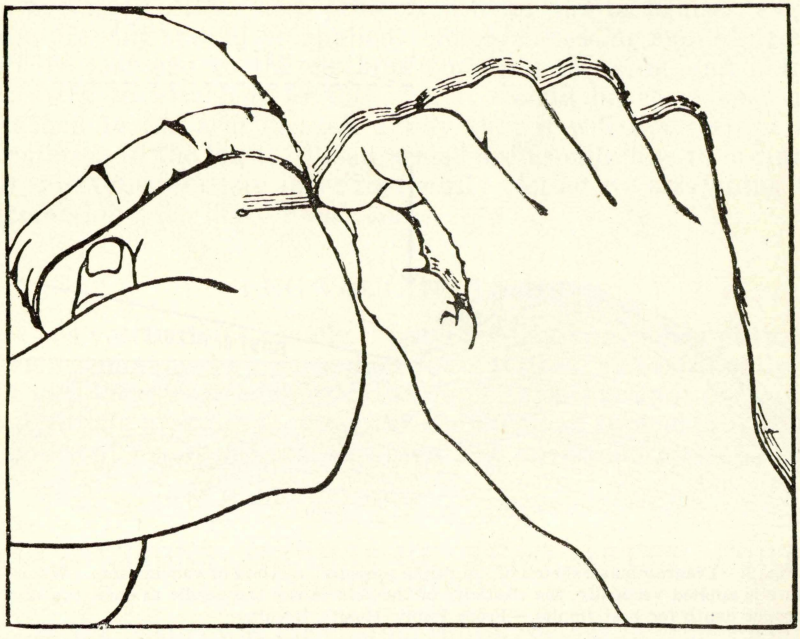


Fig. 1. The "multiple pressure" method of vaccination, showing the up-and-down motion of the side of the needle.—From Public Health Reports.

Doctor Leake believes that the "multiple pressure" method is one of the best methods of vaccination. In this method, the skin at the insertion of the deltoid muscle is first cleaned without irritation, using either alcohol or acetone. Acetone dries faster than alcohol and is therefore more satisfactory for rapid work. A drop of smallpox vaccine is then placed on the clean dry skin at the base of the deltoid muscle, being careful that the drop does not cover an area greater than one-eighth of an inch. The needle used

should be new, sharp and sterile, and is held in the right hand of the operator with the forefinger and middle finger of the right hand on top of the needle and the thumb below it, and is not thrust into the skin but is held parallel to it. (See Figure 1.) The side of the needle point is next pressed firmly and rapidly into the drop of vaccine about thirty times in five seconds, the needle being lifted clear of the skin each time. This rapid up-and-down motion of lifting the needle and pressing it against the skin should be perpendicular to the skin and the needle, and with no pressure toward the needle point. The point of the needle is not driven into the skin, but at each pressure, the elasticity of the skin will pull a little of the skin over the point of the needle so that the vaccine is carried into the deeper layers of the epidermis or just below them—the point where multiplication of the vaccine takes place most easily. (See Figure 2.)

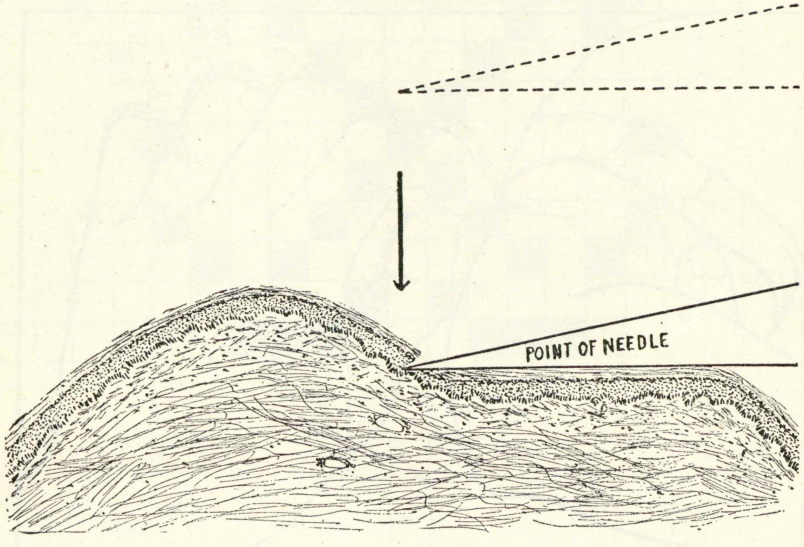


Fig. 2. Diagrammatic sketch of "multiple pressure" method of vaccination. When the pressure is applied vertically, the elasticity of the skin causes the needle to enter the skin to the proper depth for best results.—From Public Health Results.

If the skin has not been irritated by excessive rubbing, cleaning, and if the pressure has been perpendicular to the needle, no bleeding should occur and all evidence of vaccination will fade out in less than six hours. Immediately after the needle pressures have been applied, the remaining vaccine is wiped off the skin with sterile gauze and the sleeve pulled down. The whole operation should not take more than ten seconds.

Comparison has shown the percentage of "takes" to be as high with the multiple pressure method as with any other safe method. The advantages of this method are: It is more rapid

than any other effectual and safe method; it is relatively painless; no control site is necessary, since all evidence of trauma has disappeared before the time for observation of immune reactions; the vaccine is wiped off immediately and the uselessness of a dressing is obvious to the person vaccinated.

VACCINATION DRESSINGS

The crust is Nature's own protection, and ordinarily makes a dressing unnecessary. It is desirable that a firm dry crust should be formed and since dressings usually keep the vaccination moist, they are undesirable. Dressings must be changed frequently, and since they usually stick to the top of the vaccination, Nature's protection is torn away when the dressing is removed. Shields of celluloid or felt are especially undesirable and frequently dangerous. When a person's work is such as to make a dressing necessary, either as a protection from dirt or bruises, a light loose dressing should be applied. Such a dressing should preferably be fastened to the clothing covering the arm, and if it is necessary to attach it to the arm, it should be very loose and attached to the arm in such a way that it will not restrict the circulation in the least. "Bad arms" are usually due to ordinary pus infections and are most frequently caused by scratching the vaccination with dirty finger nails.

LEG VACCINATIONS

Leg vaccinations usually result in a temporary disability, are often accompanied by a purplish discoloration, and frequently result in a large slow-healing ulceration. Arm vaccinations, using the multiple pressure method, result in a small typical scar which is sufficient for inspection purposes, but hardly noticeable otherwise.

VACCINATIONS SHOULD BE READ AFTER FORTY-EIGHT HOURS

In the past it was the custom for physicians to read vaccinations on the tenth day. When the vaccination did not "take" it was assumed that the person was immune, but there was always the possibility that the vaccine used was of poor quality. The usual custom was, therefore, to revaccinate such cases.

There are three types of reaction to smallpox vaccination which indicate the amount of immunity or lack of immunity to smallpox possessed by the individual. These reactions are known as the Immune Reaction, the Accelerated or "Vaccinoid" Reaction, and the Primary Reaction, and reach their height on the second, sixth and tenth day respectively. By inspecting the vaccination on the days mentioned above, all doubt as to the

immunity of the individual or the potency of the vaccine can be removed. The characteristics of three types of reactions are:

1. *Immediate or Immune Reaction.* This type of reaction is seen in individuals who possess a high immunity. A small papule appears which reaches its height in about forty-eight hours and subsides without forming a vesicle.

2. *Accelerated or "Vaccinoid" Reaction.* This reaction indicates a partial immunity due either to a previous attack of smallpox or a previous vaccination. A papule appears on the third or fourth day. There is always vesiculation, and the reaction reaches its height on the sixth or seventh day, after which it rapidly subsides.

3. *Primary Reaction or "Vaccinia."* This reaction is seen in those who have not been previously vaccinated or whose immunity from previous vaccinations or smallpox has been entirely lost. A papule appears from the third to fifth day, and the reaction reaches its height on the eighth or tenth day. The vesicle has a turbid, whitish appearance, and if properly cared for does not become a true pustule. It dries up and heals promptly after the height of the reaction is passed.

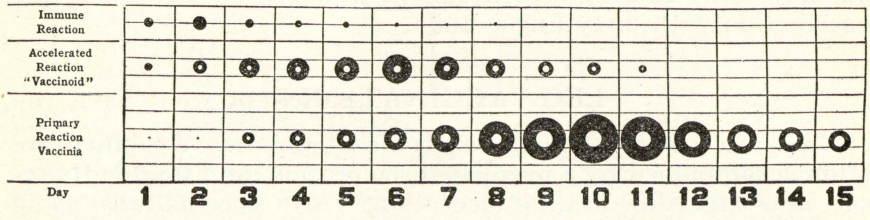


Fig. 3. Reactions following vaccination.—From N. Y. Health News.

Figure 3 gives an approximate comparison of the size and duration of the three types of vaccination. All gradations between the three types will be met in practice, and the decision as to the type is based on the time of the greatest breadth of redness. If none of these reactions are noted, or if the papule does not appear until the third day and fails to progress, the vaccination should be considered a failure and the person should be revaccinated.

References:

Leake, Public Health Reports, Jan. 28, 1927, pp. 221-238; Health News (N. Y.) Vol. II, No. 42.

The methods of quackery are merely a theft from the most ancient phases of folk-medicine.—Sudhoff.

DIRT, DISEASE AND DISINFECTANTS

Ross L. Laybourn

Some wag has amplified the old proverb, "Cleanliness is next to Godliness," by adding "and in the case of the small boy, it is next to impossible." Whatever the spiritual effect of cleanliness may be, the large number of healthy, happy small boys who get as dirty as pigs at every opportunity, testify to the fact that while Old Mother Earth's unadulterated variety of dirt may increase the laundry bill, it is not necessarily a menace to health. These small boys acquire billions of germs with their dirt, the same kind that you pick up in the immaculate parlor of the best housekeeper in town—perfectly harmless germs that you can't avoid no matter how hard you try, for they are everywhere and will always be found in and on the leaders of society as long as the old world stands.

Don't let the fact that there are germs everywhere throw you into a panic. It's time that Mr. and Mrs. Average Citizen learned to differentiate between the germs that are harmless and those that are dangerous, where each may be found, and how to avoid the bad ones. The unreasonable fear aroused by the mere mention of the word germ is being used by people who have things to sell to make it appear that their antiseptic soap, tooth paste, vacuum cleaner, cigars, gargles, antiseptics, or what have you, must be used, if we poor harassed humans are going to survive the battle with the germs. Ambitious advertising agencies pretend to sell health when they are actually doing the cause of public health a great deal of harm by parading the bogy of germs before people who are not familiar with the fact that there are good and bad germs. The much-maligned, harmless, or beneficial germs that are used as the basis of this cunningly devised sales misinformation are strict non-combatants and do not know that they are even supposed to be engaged in a death struggle with the human race. However, the subjects under consideration are dirt, disease and disinfectants and we must get back to them.

There are two kinds of dirt: harmless dirt supplied by Mother Nature, and deadly dirt supplied by living things. Disease germs leave the bodies of their victims in one or more of the body discharges (the deadly dirt) and reach their next victim in this same filth. It may be so well diluted with harmless dirt or water that it is not noticeable or obnoxious, but it is just as much a menace to health as the pure article. Disease germs only live a few days when separated from the human beings from whom they get the food, moisture, and warmth, so deadly dirt must be fresh to be dangerous. When a person develops a communicable disease, it means that he has acquired a portion of someone's freshly discarded excretions. Certainly not a pleasant

thought! So, after all, common decency is the important thing and people, not things, are the criminals responsible for the spread of disease. The most important use of antiseptics is in killing disease germs at their source by disinfecting the body wastes of the victim of disease and the articles which he uses. Chemical antiseptics are not the only ones that may be used for this purpose, for disease germs may be killed by sunning, boiling, or baking and one of these methods may be cheaper and more effective than a chemical disinfectant. The method used depends upon the kinds of articles that are to be sterilized and the characteristics of the microbes that we want to kill.

Should we deluge ourselves, the telephone mouthpiece, the door knob, our possessions and the places where we live and work with antiseptics in order to kill the disease-producing microbes deposited there in small amounts of human wastes? Let's study the problem before we decide. One prominent health authority has said, "Who can doubt that if the salivary glands secreted indigo, the fingers would be constantly stained blue? In this universal trade in human saliva, the fingers not only bring foreign secretions to the mouth of their owner, but there, exchanging them for his own, distribute the latter to everything that the hand touches." Suppose that we do destroy the microbes that were deposited on the door knob a few minutes ago, the next person that passes through the door will, in all probability, replenish the supply. Our carelessness with these secretions of the mouth and nose and the number of disease germs that leave and enter the body through these openings make it appear almost impossible for any of us to escape these diseases and, as a matter of fact, few of us do. Doping the things that we use with antiseptics is not the important thing in such cases, for the cleanliness of our hands when they are brought to the mouth and nose has a lot more to do with whether we contract colds, diphtheria, scarlet fever, mumps, measles, whooping cough, pneumonia and many other diseases than the use of antiseptics. These smelly chemicals may kill the dangerous microbes that are present and which have not already passed out because of starvation or thirst, but they do not remove the filth that always accompanies them and this is where cleanliness and common decency comes in. The use of plenty of soap, warm water and elbow grease will loosen and wash away this material with its cargo of germs and send the whole disgusting mixture down the drain where the germs will die in a few days. This cleanliness trio also have the advantage of being cheap, easily obtained and they require no great amount of skill or knowledge for their efficient use.

"Will gargling kill the 'flu' germ?" "Yes, if you can catch him and make him gargle," answered the physician who writes the health column for one of our large daily newspapers. You can't kill the germs that are being entertained by a human

being by pouring antiseptics down him or by dipping him in a disinfectant bath, for antiseptics are designed to destroy living things and any chemical that is strong enough to kill germs will also damage, to a certain extent at least, the human tissue on which it is applied. Even sunlight, which is a powerful and inexpensive disinfectant, may be quite irritating to the skin as many of us learned to our discomfort after a sunny afternoon at the swimming hole in the good old days. Antiseptics are used on small areas of the body when the destruction of a small amount of human tissue is of less importance than the destruction of dangerous germs which may be present. Mouth washes and gargles that would kill even a small percentage of the bacteria that are normally present in the mouth would be too strong to use and the fact that they may kill harmless germs in a test tube does not justify the extravagant claims made for them or assure us that they will do the same thing when human tissues and the secretions of the mouth and nose are also present. The alleged antiseptic action of these washes should not be confused with their medicinal effect for they may have a beneficial effect upon the gums and other tissues of the mouth and in using them, it is quite probable that many living bacteria may be loosened and washed away.

The fact that fumigation for the destruction of dangerous germs has been discredited by modern scientific research and is no longer required by most boards of health comes as a distinct shock to many people. The destruction of dangerous microbes by fumigating gases depends upon two things: the strength of the gas used and the length of time that articles in the house are exposed to it. The average house cannot be sealed tight enough to keep the concentration of the gas up to the proper strength for the length of time necessary to destroy the disease-producing bacteria and so the net results of fumigation as commonly practiced are a very disagreeable odor and a false sense of security. Neither does fumigation remove the obnoxious dirt disseminated by the patient and here again cleanliness is required by the demands of common decency. A thorough housecleaning with its scrubbing, sunning and airing is much more effective than fumigation and will immediately rid the premises of the dangerous germs that can only live a few days away from the human body.

It is true that fumigation following contagious diseases is still practiced quite extensively. This is simply a matter of burning incense on the altar of public opinion, as well-trained health officers know that it is of little or no value, but they also know that health officers have lost their jobs because they did not fumigate when public opinion demanded it. The idea that fumigation is an important factor in the prevention of disease is so thoroughly instilled in the minds of many people that it will take years of education by health authorities to overcome this mistaken idea.

Some misunderstanding also exists regarding the so-called deodorants used in theatres, public buildings and toilet rooms. They are not what the name suggests and do not accomplish the things that are sometimes claimed for them for they do not destroy odors but simply cover them up with a stronger and less objectionable odor. In large groups of closely-crowded people, proper ventilation will carry away the unsavory odor of the "great unwashed" and it will not be necessary to mask it with one of these mild gas attacks. The odors in toilet rooms that are so often covered up by deodorants are due to accumulated filth and if scrupulous cleanliness and proper ventilation are made the rule, deodorants will not be necessary.

Cleanliness and common decency are an important part of disease prevention. Keep your saliva and other secretions to yourself and encourage others to do the same without making a nuisance of yourself. Wash your hands before eating or before bringing them to your mouth or nose for any cause. Wash the rest of your body and clean your house as often as is necessary to maintain your social status as a decent person. Maintain your bodily resistance by eating clean, well-prepared food, outdoor exercise, adequate sleep, wise work and play, and by having your physician check the condition of your body by an annual physical examination. Then clinch the proposition by immunization against such diseases as typhoid fever, smallpox, and diphtheria and you will be doing about all that you can to protect yourself against disease. This immunization is another story and will be considered at another time.

For many diseases the infection is present in the nose and throat secretions of patients and carriers. Such persons, if their hands are freshly soiled with these secretions, may deposit on everything they touch a sufficient number of germs to infect many who come in contact with those soiled objects.

The idea of a public drinking cup or a family toothbrush is too revolting to discuss. The danger of kissing has been made a joke. The friendly handshake, a custom established by long usage, may prove disastrous if the hands are not free of deadly germs. The pencil, eraser, telephone transmitter, anything in fact that touches or goes into the mouth, may prove an agent for the transmission of disease. The door knob, stair rail, chair arm, street car strap—even money—may have been soiled with the hand of a careless person.

No one need be too finicky about contacts with all these objects but one can well afford to be a little finicky at least about eating, placing the hands to the mouth or eyes and moistening the fingers with the tongue if the hands have not been recently and thoroughly cleansed with soap and water and dried with a clean towel.—F. A. Brink, M. D. (Florida Health Notes).

MISSOURI WATER AND SEWERAGE CONFERENCE

On February 26, 27 and 28 a class of 25 men met at Columbia to attend the first short course in Missouri for water purification and sewage-treatment plant superintendents. Through the co-operative efforts of the University of Missouri and the State Board of Health, a series of lectures and laboratory exercises in the chemistry, bacteriology and biology of water and sewage treatment was offered at this short course.

WATER PLANT OFFICIALS ATTENDING SHORT COURSE OF INSTRUCTION

First row, from left to right: T. E. McDill, Salisbury; J. H. McKinney, Mexico; H. D. Brown, Vandalia; W. E. Barnes, Liberty; F. L. Thierfelder, Chillicothe; S. J. Duncan, Moberly; G. Z. Boyd, Joplin. *Second row:* H. M. Lauber, Savannah; C. C. Stadler, Jefferson City; T. L. Goodwin, Parkville; W. E. Lehr, Eldon; E. S. Glenn, Carthage; E. R. Dougherty, Jr., Bowling Green. *Third row:* F. E. Turner, Cameron; Theodore Thilking, Jefferson City; J. D. Siever, Cameron; C. H. Campbell, Marceline. *Top row:* H. D. Peters, assistant public health engineer of the State Board of Health, Jefferson City; J. R. Lorah, assistant professor of chemical engineering, University of Missouri; H. M. Bosch, assistant public health engineer of the State Board of Health, Jefferson City; R. L. Beck, Trenton; J. L. Kornfeld, St. Louis; John Allgeyer, St. Louis; A. E. Thain, Neosho.

The classes were held at the University and the lectures and laboratory exercises were under the supervision of the following instructors:

Dean E. J. McCaustland, College of Engineering, University of Missouri.

Dr. M. P. Ravenel, Professor of Medical Bacteriology and Preventive Medicine.

Dr. J. R. Lorah, Assistant Professor of Chemical Engineering.

Dr. M. P. Moon, Assistant Professor of Medical Bacteriology and Preventive Medicine.

Mr. R. L. Laybourn, Bacteriologist, State Board of Health of Missouri.

Mr. W. Scott Johnson, Chief Public Health Engineer, State Board of Health of Missouri.

Mr. H. M. Bosch, Assistant Public Health Engineer, State Board of Health of Missouri.

Although the plan of study was designed to familiarize those attending with fundamental principles involved in water purification and sewage treatment, these basic facts were correlated with their practical application and interpretation.

The attendance considerably exceeded that anticipated and represented twenty-two cities located in all parts of the state. Following is a list of those who attended:

John Allgeyer, Supt. of Filter Plant, Chain of Rocks Station, St. Louis, Mo.

W. E. Barnes, Supt. Water Works, Liberty, Mo.

Roy L. Beck, Chief Engr. Trenton City Water Works, Trenton, Mo.

G. Z. Boyd, Chief Engr. Joplin Water Works Company, Joplin, Mo.

Hugh Brosn, Supt. Water Works, Vandalia, Mo.

E. R. Dougherty, Jr., Asst. Supt. Water Works, Bowling Green, Mo.

S. J. Duncan, Supt. Water Works, Moberly Mo.

W. J. McCarroll, Supt. Water Works, Fulton, Mo.

C. H. Campbell, Operator Marceline Water Works, Marceline, Mo.

C. O. Ewens, Supt. Water Works, Fayette, Mo.

T. H. Gideon, Mayor, Springfield, Mo.

E. S. Glenn, City Engineer, Carthage, Mo.

T. L. Goodwin, Supt. Water Works, Park College, Parkville, Mo.

J. L. Kornfeld, Supt. of Filter Plant, Howard Bend Station, St. Louis, Mo.

H. M. Lauber, Supt. Water Works, Savannah, Mo.

W. E. Lehr, Supt. Water Works, Eldon, Mo.

T. E. McDill, Supt. Water Works, Salisbury, Mo.

J. H. McKinney, Supt. Missouri Power and Light Co., Mexico, Mo.

R. L. Potter, Commissioner of Public Utilities, Springfield, Mo.

John D. Siever, Filter Plant Operator, Cameron, Mo.

C. C. Stadler, Chief Engr. Capital City Water Co., Jefferson City, Mo.

A. E. Thain, Supt. Water Works, Neosho, Mo.

F. L. Thierfelder, Supt. Water Works, Chillicothe, Mo.

Theo. Thilking, Meterman Capital City Water Co., Jefferson City, Mo.

F. E. Turner, Supt. Water Works, Cameron, Mo.

The opinion of many who attended this short course indicated that the results more than warranted the time and effort expended. Since the ultimate purpose is to improve the quality and number of technically capable operators in Missouri, probably only time will indicate how successful a school of this nature is in accomplishing this end. The enthusiasm and interest of those who attended indicate strongly the need and desirability of a repetition next year, with certain variations, of the short course for water purification plant and sewage-treatment plant operators.

MISSOURI WATER AND SEWERAGE CONFERENCE NOTES

Plans for a water and sewerage system at Warsaw have been approved by the State Board of Health. Warsaw will be one of the important gateways to the immense lake which will be formed by the dam on the Osage River at Bagnell.

Final inspection and approval by the State Board of Health have been made of the new water purification plant at Poplar Bluff. This is the only water purification plant located in the extreme southeast section of Missouri and will constitute a show place in that section of the state, as well as a municipal improvement of which Poplar Bluff may be proud.

Final inspection by the State Board of Health has been made of the new water and sewerage system at Norborne. The number of small cities in Missouri which are awaking to the need of a safe water supply and satisfactory disposal of sewage is increasing slowly but surely each year.—W. S. J.

The town or city having the greatest percentage of sound, healthy people is the most progressive and consequently the leading one in the state.—Weekly Bulletin, Col. Dept. of Health.

Cleanliness is one of the main foundations of health, which means that the aim of keeping clean must be kept in mind and practiced throughout our daily life—and not only in ourselves, but in our surroundings. This is one of Nature's laws, and the penalty for disobeying it is disease.—Sir W. Arbuthnot Lane, Bart., C. B.

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman Mental Hygiene, Missouri Association of Parents and Teachers

OVER ONE-THIRD OF MENTAL DISEASES PREVENTABLE.

With awakened understanding, it has been found that many of the mental diseases are not only curable, but preventable. In fact, the great emphasis of mental hygiene is on prevention. The greatest hope of prevention, here as anywhere, lies in the beginnings. At the very onset of physical disturbance, medical advice is sought, but the symptoms of mental disturbance are either unrecognized or unrevealed (i. e., silence is maintained regarding them). There still exists the medieval attitude that views mental disease as God or devil-sent, and in either case, as a family disgrace; that views the mental hospital as the "lunatic asylum," a place of living death from which there is no escape. The physically ill evoke pity; the mentally ill, fear.

The great problem of mental hygiene, then, is to dissipate all these inherent false beliefs on the subject of mental disease and to make universally known the means of prevention and the particular importance of bringing the very beginnings of any mental disturbance immediately to the attention of the proper medical adviser.

It is estimated that from one-quarter to one-third of all mental disease can be prevented. This includes most all mental diseases due to infection or poisons, among which are those mental diseases caused by syphilis in the form of paresis, sometimes called "softening of the brain." The campaign against paresis is a campaign against mental disease. Indications point to the ultimate successful stamping out of syphilis, that is, of paresis and, therefore, to the ultimate successful stamping out of 15 per cent of all mental disease. Among this class of diseases due to poisons are those mental diseases caused by the excessive use of alcohol.

Also included among the preventable diseases are those mental disorders that follow continuous hard work; that are due to exhaustion from illness and pain; to sudden intense or long-continued stress and strain of opposing desires, ambitions and duties or to prolonged responsibility. These are the functional nervous diseases, "neurasthenia," "hysteria," "nervousness" or "nerves," causing the so-called "nervous breakdowns."

Thus it is now definitely and absolutely assured that much of organic mental disease (such as paresis—known legally as insanity) can be prevented, and that a certain portion of the so-called functional nervous diseases or mental disorders (such as "nervous breaks") can likewise be prevented, provided the principles of mental hygiene are fully known and properly followed. ——Dr. A. J. Ostheimer, Director Pennsylvania Mental Hygiene Committee, Charities Association.

SOCIAL HYGIENE

Contributed by Mrs. Robert McE. Schauffler, Chairman Social Hygiene, Missouri Branch National Congress of Parents and Teachers

THE SCOPE OF SOCIAL HYGIENE

Social hygiene in its broadest and true sense deals with social health or, in other words, with the welfare of human social groups. It is generally recognized in anthropology that the central or key groups in human society have their foundations in the natural associations of the two kinds, or sexes, of human beings—men and women, who in their immature stages we call boys and girls. These associations of the sexes include the various combinations of physical, psychical, and social relationships which are primarily within family groups, and thence radiate out into the community.

Now, since social hygiene is concerned with the welfare of human social groups which, in turn, are held together by the biological bonds between the two sexes, it has come about that in going far into the deeper meanings and problems of human society social hygiene has become known to the world in general as a "sex science." This is quite true if the word "sex" is understood as it is in biology or psychology or sociology, namely, the word for the fact that there are two kinds of human life. But, unfortunately, these two kinds of humans had a few hundreds of thousands of years of historical mistakes with sex before men of science had a chance to point out that, in the last analysis of human society, sex is the foundation of all that appears worthwhile, and that the past and present mistakes between the sexes are merely markers on the road up to a fuller realization of the inherent possibilities implanted when mankind appeared on earth in two forms.

Social hygiene is indeed sex science because the only real meaning of sex is not the widespread vulgar one, but that of modern science, which points out that sex includes all the associations and relationships of men, women, and children who must live and work together in this world of ours.

Even a limited survey of the social welfare problems which involve the natural relations of the two human sexes suggests that the field of social hygiene is of vast extent, in fact, almost co-extensive with that field of civilization as we know it. This field is obviously too large for practical work, and so the American and British social hygiene societies have chosen to limit their activities to certain phases in which it appears that along educational, medical, and legal lines it is possible to improve social health or welfare by giving special attention to some of the most direct and pressing problems which have grown out of the fundamental relation of the sexes. As a result of this emphasis on some direct sex problems, it has naturally followed that the larger

outlook of social hygiene has been overlooked, even by many intelligent persons. As an illustration, several times this year I have heard the question, "Why should a sex society concern itself with family and social problems?" The very form of the question indicates a narrow understanding of sex. With all the necessary emphasis on direct problems of sex, the American Social Hygiene Association has not forgotten the broad meaning of social hygiene, and reserves the right to undertake any problems of social health which concern men and women in their social relationships.—M. A. Bigelow, Professor of Biology and Director of the School of Practical Arts, Teachers College, Columbia University.

Health is not an artificial accomplishment, quickly acquired and easily maintained. It is a development of body and mind; a growth, slow in process; a habit, broad-based upon heredity and nurture; a balance of moderation in all things, a harmony of a sound mind in a sound body, good nutrition combined with a steady nervous regulation.—George Newman.

There is one point in which all men might be born free and equal. That is in regard to health. If a child has clean blood, a good brain, and a mother who knows how to care for herself and for him he is equal to any other child on the face of the earth. —Roosevelt.

What a Chance!

Cheer up!
You have two chances—
One of getting the germ
And one of not.

And if you get the germ
You have two chances—
One of getting the disease
And one of not.

And if you get the disease
You have two chances—
One of dying
And one of not.

And if you die,—Well, you still have
two chances.

SANITARY INSPECTORS' SCORE FOR 1929

Following a procedure started in 1928, the full-time sanitary inspectors in Missouri have again been scored on a basis of their reported accomplishments during 1929. The reader is referrred to page 100 of the March bulletin issued in 1929 for a report on the 1928 scoring. The accompanying table indicates the method of scoring and the score for each county inspector.

The rating study shown herewith includes the data covering the year ending December 31, 1929, obtained from monthly reports of the sanitary inspectors attached to seven full-time county health units in Missouri. It is appreciated that in no case is the entire field work of an inspector included, for he is called upon to do many things that are impossible to report. However, the most important items of sanitation are included in the inspector's monthly report, and these constitute the basis of this rating.

What should be accomplished by each inspector in each item of sanitation is determined by an average per man per year over the past two-year period, and is indicated in the rating as the "Standard" for each item. In almost every instance the standard is higher than that of 1928, which indicates improvement in the average quantity of work accomplished by the inspectors in Missouri.

In the rating for 1929 each of the 30 items is given an arbitrary weight of 30, making the "Total Score" obtainable 900. The "Per Cent of Total Score" is derived by using the total possible score of 900 as the basis of calculation. Attention is directed to the "Per Cent of Total Score" secured in certain counties in 1928 as compared with that secured in 1929. In two cases, namely New Madrid and Scott counties, there has been a marked reduction in accomplishments in 1929 as compared with 1928.

As in previous ratings, column 1 shows what percentage of the standard was accomplished in each item of sanitation by the inspector, and in column 2 is shown this percentage of 30, or the score earned on each item of sanitation. On the assumption that it is most desirable for an inspector to carry on a well-balanced inclusive program, an activity participated in to excess of the average or standard is not credited and a weight of only one hundred per cent of the standard given.

Example: Under "Water Supplies Corrected," 23 is the standard for a year's accomplishment. In Greene County 18 water supplies were corrected (taken from the monthly reports), which equals 78% of the standard as shown in column 1, which entitles the inspector, of course, to 78% of the weight 30 which is 23, shown in column 2.

This method of scoring makes no attempt to rate the health conditions in any county concerned from a sanitary standpoint,

STATE BOARD OF HEALTH OF MISSOURI—DIVISION OF SANITARY ENGINEERING

METHOD OF SCORING THE ACTIVITIES OF FULL-TIME COUNTY SANITARY INSPECTORS—1929

SANITATION ITEMS		Standard*	Greene		Jackson**		N. Madrid		Pemiscot		St. Francois		St. Louis**		Scott	
			1	2	1	2	1	2	1	2	1	2	1	2	1	2
WATER SUPPLIES:	Installed	14	7	2	82	25	100	30	85	25	100	30	0	0	21	6
Semi-Public	Inspected	98	100	30	93	28	100	30	100	30	100	30	44	13	53	16
	Corrected	23	78	23	100	30	100	30	100	30	100	30	52	16	83	25
MILK SUPPLIES:	Inspected	52	100	30	100	30	23	7	33	10	28	8	100	30	9	3
Dairies, plants, etc.	Improved	11	100	30	45	14	18	5	0	0	0	0	100	30	18	5
PUBLIC FOOD HANDLING PLACES:	Inspected	39	100	30	51	15	23	7	100	30	100	30	36	11	7	2
	Improved	21	100	30	26	8	43	13	100	30	100	30	28	8	24	7
SCHOOLS:	Inspected	131	100	30	100	30	100	30	87	26	100	30	9	3	37	11
	Improved	36	100	30	69	21	100	30	92	28	100	30	0	0	91	27
SCREENING:	Inspected	85	100	30	22	7	27	8	100	30	29	9	58	17	68	20
(Fly and mosquito control)	Approved	67	43	13	22	7	15	5	100	30	27	9	42	13	27	8
New	Installed	33	100	30	9	3	94	28	100	30	100	30	66	20	48	14
PRIVIES:	Inspected	364	100	30	40	12	98	29	100	30	100	30	27	8	51	15
Fly-tight	Corrected	45	100	30	88	26	100	30	87	26	100	30	100	30	2	1
SMALL SEWAGE TREATMENT	Installed	10	90	27	20	6	30	9	20	6	100	30	60	18	80	24
PLANTS:	Inspected	31	48	14	100	30	23	7	48	13	100	30	100	30	97	29
Private or Semi-Private	Corrected	10	20	6	100	30	40	12	50	15	100	30	100	30	10	3
GARBAGE DISPOSAL:	Inspected	56	100	30	41	12	10	3	100	30	100	30	100	30	100	30
	Corrected	41	100	30	19	6	5	1	73	22	100	30	100	30	100	30
COMPLAINTS:	Inspected	90	77	23	100	30	11	3	16	5	100	30	100	30	5	1
Nuisance, etc.	Corrected	59	100	30	100	30	12	4	14	4	100	30	100	30	8	2

METHOD OF SCORING THE ACTIVITIES OF FULL-TIME COUNTY SANITARY INSPECTORS—1929—Continued.

SANITATION ITEMS		Standard*	Greene		Jackson**		N. Madrid		Pemiscot		St. Francois		St. Louis**		Scott	
			1	2	1	2	1	2	1	2	1	2	1	2	1	2
HIGHWAY SANITATION:	Inspected	22	100	30	100	30	100	30	100	30	100	30	59	18	8	2
Comfort Stations	Approved	8	100	30	100	30	4	1	37	11	100	30	87	26	25	8
RESORTS AND CAMPS:	Inspected	12	100	30	28	8	8	2	25	8	100	30	8	2	0	0
	Approved	2	100	30	100	30	100	30	50	15	100	30	25	7	0	0
SWIMMING POOLS:	Inspected	2	100	30	25	7	50	15	0	0	100	30	25	8	0	0
	Approved	1	100	30	0	0	100	30	0	0	100	30	50	15	100	30
Connections to municipal water supply		54	83	25	100	30	6	2	100	30	100	30	3	0	39	12
Connections to municipal sewer		46	100	30	80	24	2	1	100	30	100	30	20	6	46	14
Group meetings		12	100	30	0	0	83	25	33	10	100	30	91	27	100	30
TOTAL SCORE				793		559		457		584		806		506		371
PER CENT OF TOTAL SCORE—1929				88		62		51		65		90		56		41
PER CENT OF TOTAL SCORE—1928								66		47		72				71

*Indicates average accomplishment per man per year for two years.

**Indicates counties with two inspectors; rating is the average per man and not total for county.

Column 1 shows the per cent of the standard accomplished by each inspector in the various sanitation items.

Column 2 shows the percentage of 30 (the weight allowed per item to make a possible score of 900) that is due in each case, according to the per cent of the standard accomplished shown in Column 1.

but does show numerically the relative accomplishment toward better sanitation of each inspector on the basis of the average work accomplished in one year by all inspectors. Continuing the application of this method of scoring from year to year to the work of sanitary inspectors, there will be established an average standard for a year's work, which will be a guide to health officers and inspectors alike as to what should be expected, and what constitutes reasonably effective progress by a sanitary inspector.—W. A. McG.

On the average, an efficient, well-balanced whole-time rural health service costs about $20,000 a year. The sum of $12,000 annually is the minimum that would give such a project a fair chance for success. It is estimated that the national economic loss annually in wage earnings and other items incident to preventable sickness in rural counties exceeds one billion dollars. Money invested in well directed whole-time county health service yields to the taxpaying public annual dividends ranging from 100 to 3,000 per cent, due to the reduction in the economic loss. —Michigan Public Health.

Motherhood should not be dreaded if medical advice is secured early in pregnancy and the prospective mother lives a normal, healthy life.—Michigan Department of Health.

"The great things of life are not the exceptional things, but the beauties of every day, which we do not stop to notice. The vast treasurers within our grasp, which we do not even touch, they are the things which count. Indeed, I do not know why we demand another life, since we have not learned to enjoy and understand this one fully."—Auguste Rodin.

Health is not an end in itself; life is not an end in itself. Both life and health are means to a nobler end.—Thurman B. Rice, M. D.

If any one thing, however, has been settled in this realm of thought by unison of opinion, it is the State-wide extension of the interest in the maintenance of life and health. The advancement of that interest, like the advancement of education, is a function of the State at large.—Chief Justice Cordozo, N. Y. Court of Appeals.

THE QUESTION BOX

Questions on public-health subjects which are sent in by readers of *Missouri Public Health News* will be answered under this heading. Address all queries to The Question Box, *Missouri Public Health News*, c/o The State Board of Health, Jefferson City, Mo.

Question: A little girl died here of meningitis and the doctor claims that it is not the contagious kind. Are there two kinds of meningitis? Is there a serum that can be used to prevent meningitis in those who have been exposed to this disease?—Mrs. C. D.

Answer: The word meningitis means an inflammation of the meninges (the coverings of the brain and spinal cord). This inflammation may be caused by the same kinds of bacteria which produce inflammation and pus in other parts of the body. The type of meningitis which is communicable is known as epidemic cerebrospinal meningitis and is caused by a germ commonly called the meningococcus. This organism is passed from person to person in the saliva and nasal secretions by means of the common drinking cup or by droplets of saliva which are thrown into the air in coughing or sneezing.

Vaccines and serums have been used in an attempt to protect susceptible individuals against epidemic meningitis. These preventive treatments are in the experimental stage and there is no scientific evidence available to show that they are of any value. The State Board of Health of Missouri does not, therefore, recommend their use.

A study of a large number of cases of epidemic meningitis shows that the majority occur among people who are careless of their personal cleanliness and who live in overcrowded, poorly-ventilated and over-heated homes. The physical condition is also an important factor in avoiding this disease, as very few cases occur in persons who are in good physical condition. —R. L. L.

OF PUBLIC HEALTH INTEREST

The tentative dates for the Sixth Annual Meeting of the Missouri Public Health Association have been set for April 22 to 25, inclusive. The program will be issued in the near future and promises to be the most instructive and practical ever presented at a meeting of the association.

As a result of the occurrence of more than sixty cases of smallpox in the city of Columbia, the Boone County Medical Society adopted the following resolution February 26:

"Inasmuch as smallpox is a preventable disease, and whereas successfully vaccinated persons will not develop this disease, the Boone County Medical Society members recommend and urge that all persons, including babies, who have never been vaccinated, or who have not had a successful vaccination ("take") within the last two years, be vaccinated at once."

Smallpox is prevented by successful vaccination alone. The medical profession of this community in its effort to prevent disease, unnecessary suffering, unnecessary loss of time, unnecessary expense and possible needless loss of life, urge that all individuals themselves and the members of their family be vaccinated. It is further recommended that:

1. The members of the community continue at their usual work or occupation unless sick.
2. Those who are sick remain at home, call their physician and act upon his advice.
3. Avoid contacts with others who are sick; in other words stay away from sick individuals.
4. Vaccination of each individual at once and revaccination 8 to 10 days later if the first vaccination does not give a "take."

It is to be again emphasized that there is no cause for undue alarm or concern, nor will any be anticipated, if these precautionary and preventive measures are taken.

This resolution has been given wide publicity and paid advertisements relative to the value of smallpox vaccination have been carried in the newspapers of the city at the expense of the County Medical Society. Members of the society have also donated their service for the vaccination of the school children of the city.

Mr. S. O. Von Achen, who has held the position of Sanitary Assistant with the State Board of Health for four years, resigned the first of February and has returned to his home in St. Louis County. During his association with the State Board of Health, Mr. Von Achen secured excellent results in the im-

provement of highway and resort sanitation throughout the state. More recently he has been assisting in the milk sanitation control program. Mr. Von Achen's experience and ability in matters of sanitation made him a valuable man to the State Board of Health and his loss will be keenly felt.

Mr. Frank Fields, who has been a sanitary inspector in Pemiscot County for several years, has accepted a position with the newly-established health unit in Miller County, where the construction of the huge power project on the Osage River is in progress. The influx of a large population incident to this construction has created a health hazard that demands immediate attention. Mr. Fields' full time will be spent in securing satisfactory sanitation in the camps and cities adjacent to the project and general supervision of environmental conditions, particularly as regards mosquito breeding throughout the entire area included by the proposed project.

Miss Pearl McIver, Supervisor of Public Health Nursing of the State Board of Health, has been awarded a fellowship by the International Health Board. She entered the Teachers College of Columbia University on February 1 and will complete the requirements for her degree in public health education before returning to her duties with the State Board of Health of Missouri.

Following the appearance of twenty-two cases of smallpox in Sikeston, Dr. U. P. Haw, Scott County Health Officer, was requested by the Mayor of Sikeston to meet with the City Board of Health and the City Council to consider methods of controlling the disease. Following Dr. Haw's advice, a city ordinance was enacted requiring all residents of the city to be vaccinated unless they could show a physician's certificate stating that they had been recently vaccinated or had had smallpox. The physicians of the city agreed to vaccinate all school children and indigents for a nominal fee, the expense to be borne by a board of trustees and the school board of the city.

The procedure adopted by the City of Sikeston is the only method to be relied upon to eradicate smallpox in any community and the residents of that city are to be congratulated upon having a city council with the courage and sincerity of purpose necessary to invoke standard and effective procedures for the welfare of the community regardless of the antagonism aroused among cults and faddists.

Mrs. Margaret Reddington has been appointed county nurse by the Buchanan County Red Cross. Mrs. Reddington will work in co-operation with Dr. Hull and Miss Reynolds of the Buchanan County Health Department.

Miss Ora Ann Carl and Miss Gertrude Murphy have resigned from their respective duties in St. Francois County effective February first. Both nurses have been connected with the St. Francois County Health Department for almost four years and it is with regret that we let them go. They have decided to leave the field of public health nursing and join the matrimonial group. The well wishes of all their copublic health workers go with them.

Miss Lydia Mast resigned from her duties as county nurse in Mississippi County in January, to accept a school nursing position in Iowa, in order to be nearer her home. Miss Pansy Lee Book who was a student at the Nurses Training Center last fall has taken Miss Mast's place in Mississippi County.

Miss Edna Haase has been appointed public health nurse for the Bonne Terre district, St. Francois County, to relieve Miss Gertrude Murphy.

Miss Maud Tollefson, formerly chief nurse in Boone County Health Department, will relieve Miss Ora Ann Carl as chief nurse in St. Francois County.

We have ceased to wonder how disease is spread. We wonder how anyone can escape. Unconsciously, carelessly, sometimes indifferently or even viciously mankind maintains a brisk and continuous traffic in germs. Perhaps more than any other of the higher animals the individuals of the genus homo swap microbes. In fact the give-and-take system of bacterial traffic would seem to be developed to a degree of efficiency excelled by no other.—F. A. Brink, M. D.

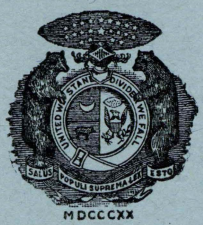
COMPARISON OF COMMUNICABLE DISEASES REPORTED DURING THE MONTHS OF JANUARY, 1929 AND 1930

Diseases.	1929	1930
Chickenpox	359	306
Diphtheria	246	174
Epidemic Sore Throat	104	14
Erysipelas	1	0
Influenza	27154	146
Malaria	1	22
Measles	1000	219
Meningitis	57	53
Mumps	78	91
Ophthalmia	1	3
Pellagra	1	0
Pneumonia	261	170
Rabies in animals	4	19
Scarlet fever	353	416
Smallpox	160	210
Tetanus	0	1
Trachoma	3	18
Tuberculosis	185	147
Typhoid fever	14	17
Whooping cough	256	140
Undulant fever	0	5
Tularaemia	0	4

MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II APRIL, 1930 NO. 8



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JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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MISSOURI PUBLIC HEALTH NEWS

Published Monthly by the State Board of Health of Missouri at Jefferson City. Sent Free, on Request, to residents of Missouri.

Vol. II **APRIL, 1930** **No. 8**

STATE WIDE CLEAN-UP WEEK

WHEREAS, the welfare of a state depends upon the health of its citizens; and

WHEREAS, the health of the people of a state depends largely upon the cleanliness and sanitary conditions of the communities in which they live; and

WHEREAS, The State Board of Health of Missouri is charged by law with the safeguarding and protection of public health;

NOW, THEREFORE, The State Board of Health of Missouri does hereby designate the week beginning April 27, and ending May 3, 1930, as general clean-up week, and does request the people of Missouri, and all agencies and organizations interested in this important work, to make every reasonable effort to promote cleanliness and sanitation in every city, town and village in the state.

James Stuart, M.D.

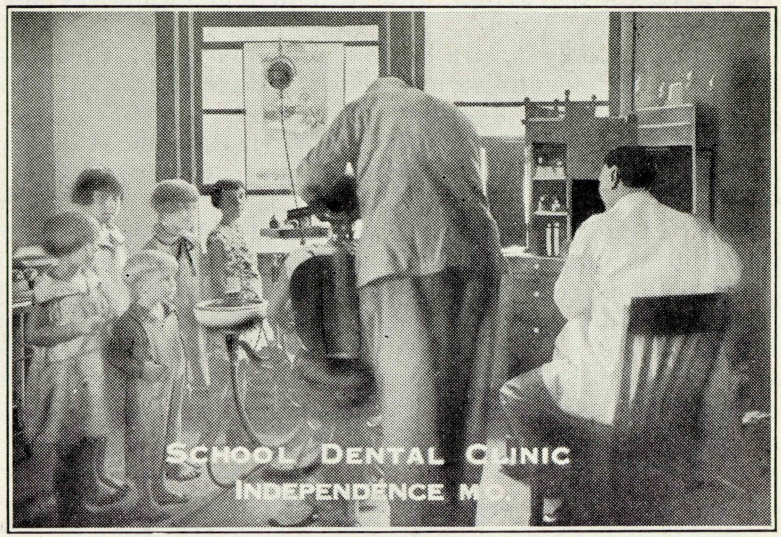
State Health Commissioner.

The 1929 Clean-up Week sponsored by the State Board of Health was a success; more than 100 Missouri cities and towns conducted clean-up campaigns during the week designated. No doubt many of these towns would not have had a general clean-up campaign had it not been suggested. This statement is made without intentional reflection upon any city official, for the officials of our smaller towns are usually the busiest men in the town and often overlook details unless brought to their attention.

Notice of designation and suggested program for conducting a clean-up campaign are being sent to the mayor of every city or town of 300 population or over in the state. The mayor of your city will receive plans for conducting a clean-up campaign, and the State Board of Health takes this opportunity to ask every reader of the Missouri Public Health News to co-operate with city officials everywhere in this work.

THE JACKSON COUNTY DENTAL CLINIC

The need of dental care and instruction as a part of the school health program has been amply demonstrated by the fact that 3,196 cavities in temporary teeth, 640 cavities in permanent teeth, 287 abscesses, 12 children with inflamed gums, 129 children with irregular teeth, 226 children with stains on the teeth, and 43 who did not use a toothbrush were found among 1,000 children in the first three grades of the Jackson County schools by the Jackson County Dental Clinic in 1929.



Why worry about decayed temporary teeth? They will be gone in a few years. The answer is: Decayed teeth and other abnormal conditions of the gums and teeth, whether in little tots or adults, furnish a fertile field for the development of abscesses or focal infections. Such conditions are the cause of many physical disabilities, such as heart disease, kidney, eye, and sinus troubles, rheumatism and other condiions which handicap the invididual throughout his entire life. The dental profession has made heroic efforts to combat these conditions, but its greatest effort has been spent in attempting to correct conditions that have developed as a result of neglect rather than to prevent focal infections, since the dangers lurking in decayed teeth have not been appreciated by the general public.

Leading dentists believe that the solution of the problem of oral hygiene and prevention lies in the education of children in early school years as a part of their school health work. The Jackson County Dental Society, in co-operation with the County Health Department, organized a dental clinic in the early part of 1929 with this purpose in view. The work has been limited to inspection, instruction, and needed correction of dental defects among the children of the first three grades of the schools of the county and a great deal of valuable work has been accomplished. The records of the clinic for the spring of 1929 show 286 fillings, 368 treatments, 241 extractions, and 51 preventive treatments. This work will undoubtedly have a highly beneficial effect on the health and welfare of these future citizens of Jackson County.—R. L. L.

HE TOOK NO CHANCES—BUT—

He brushed his teeth twice a day.
The doctor examined him twice a year.
He wore his rubbers when it rained.
He slept with the windows open.
He stuck to a diet with plenty of fresh vegetables.
He relinquished his tonsils and traded in several worn-out glands.
He golfed—but never more than 18 holes at a time.
He got at least eight hours' sleep every night.
He never smoked, drank or lost his temper.
He did his daily dozen.
He was all set to live to be a hundred.
The funeral will be held next Wednesday.
He had forgotten about trains at grade crossings.

—Wall Street Journal.

So far as human beings are concerned there are criminals in the world of invisible life no less certainly than among people. Thus there are several hundred kinds of bacteria but only a few participate in the disastrous mischief of poisoning human beings. Regarded in this light the health officer is a detective whose work concerns criminal bacteria. These offenders against the peace leave signs and clews of their cold blooded depredations like thieves, rogues and murderers of the human species. Thus every case of contagious disease marks the path of some lowly germs bent upon destruction.—Illinois Health Messenger.

HEALTH PROGRAM OF THE MARIONVILLE CONSOLIDATED SCHOOLS

BY

AVIS FISK

SENIOR CLASS, MARIONVILLE CONSOLIDATED SCHOOLS.

The November issue of the "Missouri Public Health News" carried a very effective article entitled "Brickbats and Bouquets." This article was written in answer to a complaint of a health department that they were given no publicity. The article prompted this account of our health program in the Marionville Consolidated Schools.

At the very first of the school term of 1929-1930, the organization and planning of a health program for approximately five hundred students was begun by our Director of Athletics, Mr. Warren G. Cook. This program was extended to meet the needs of not only high school students but the grade children as well.

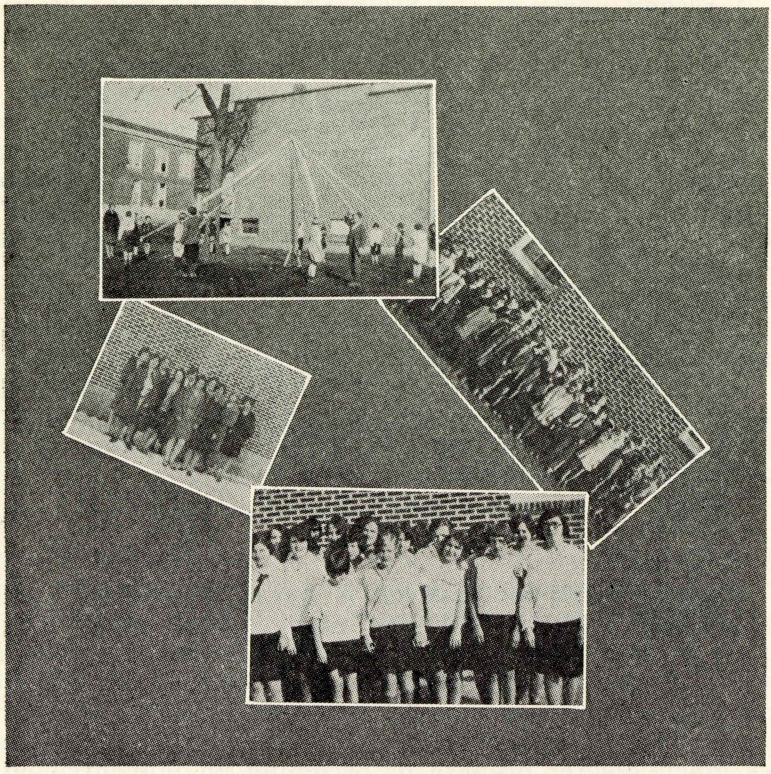
Of course the supervision of this work could not be done thoroughly by one person. The Parent-Teachers Association responded readily to the cause by raising the money to finance the buying of playground equipment, as a means of raising the money an annual school carnival was held, fostered by the Parent-Teachers Association. One hundred and fifty dollars was received for playground equipment.

Our next need, for students to act as supervisors over work among the grade children, was met by volunteers from our Health Class. Also a few students other than the Health Class were used in this work. These students acted as supervisors over playground baseball and as directors of the lunch hour play in the gymnasium.

A third and untiring worker in the carrying out of the program was Doctor F. W. Lester. Doctor Lester assisted in examining all of the grade children.

One of the most interesting features of the Health Program was the playground baseball activities. Baseball teams, one each of both boys and girls, were organized from the fifth, sixth, seventh, and eighth grades. Each team had an individual coach chosen from the list of volunteer advanced students mentioned above. At the close of the baseball season a tournament was held among the four grades.

A second feature of our playground work was the work in the gymnasium. A program was worked out whereby each grade was allowed to play in the gymnasium one day each week, beginning with the first grade on Mondays, the second grade on



PHYSICAL EDUCATION CLASSES, MARIONVILLE SCHOOLS

Tuesdays, etc. On Fridays, the fifth and sixth grades were combined. This work was also directed by advanced students, two for each grade. These students received one hundred points on their State Letter for coaching these classes free of charge for a period of not less than ten weeks.

In addition to the playground work, which appealed especially to the grade children, State Letter work has been stressed. This work has appealed to high school students in particular. Up to the present time no applications have been made for the Letter, but we hope to have a number of applications by the close of the school term.

Anyone familiar with the awarding of State Letters will recall that points are given for hiking. In the early fall a hiking club was organized among the girls. Ten of these girls took an active part in the hiking program. They met on Saturdays and hiked ten miles. This, however, has been discontinued during the winter months, but is to be resumed and completed in the spring.

A second phase of the State Letter work was the Badge Tests. These tests were directed by Mr. Cook. Several of the tests were passed but the work has not been completed.

Another important work done among the grades was the Six and Nine Point Health Tests. Mr. Cook, with the aid of Dr. F. W. Lester and members of the Health class, examined all of the grade children. Out of the two hundred and forty examined, thirty-six received pins for passing the Six Point Test. Of course the children were interested in securing a health pin and were eager to qualify. Then as follow-up work, the defects of each child were noted and sent to its parents, with the request that these defects be corrected. Just as soon as the defects were removed the child was qualified for his health pin.

Of course our program is not complete, nor could we hope to organize and make it complete in one year. However, we do feel justified in "tooting our own whistle" and telling others of what has been accomplished.

Entertainment for children is quite as essential to their good health as clean teeth and clean hands, since it gives them an opportunity to develop personality through straight thinking rather than through some other technique. For instance, the child that has a wound dressed and does not cry but says at the conclusion, "There now, I am a real man," gives much greater promise of becoming an influential citizen than the child who torments his mother for an apple and is told that if he asks again he will be spanked, calls to his mother, "Mother, when you come up to spank me, bring me an apple." Children of the latter type are a nuisance not only to their parents and teachers but to the community at large.—Florida Health Notes.

There are many factors that enter into the determination of infant mortality rates. As a meter of public health progress, contributed to from various channels, the infant mortality rate serves as a reliable index of general public health conditions. Family customs and characteristics peculiar to different races undoubtedly play important parts in the production of high infant mortality rates. Lack of knowledge concerning the best methods of infant care also constitutes a prime factor in the production of a high rate. The intestinal disturbances which cause large numbers of infant deaths are, in a measure, due to improper feeding and to improper care of milk. While congenital conditions which can not be changed are responsible for a large proportion of infant deaths, it is believed that fully half of the infant deaths that occur are preventable.—California Health Bulletin.

PUBLIC WATER SUPPLIES IN MISSOURI—1929

During 1929 each public water supply in the state was surveyed by a trained sanitary engineer. This program of supersion is carried out annually as part of the routine work of the Division of Sanitation. In compliance with recommendations submitted following the annual inspections, twenty-six sanitary defects in existing public water supplies were eliminated during the last year. For the first time a routine system of regular bacteriological analyses of public water supplies on a fee basis has been established. In 1929, 7,266 samples of water from municipal supplies were analyzed by the State Board of Health Laboratories.

The data secured from sanitary surveys and routine bacteriological analyses have been summarized into a report on the public water supplies in Missouri. The basis upon which the public water supplies are classified follows:

APPROVED. Indicates a public water supply which is satisfactory as regards construction, equipment, and operation, as determined by sanitary surveys, and one that supplies water safe from a bacteriological standpoint as determined by analyses of samples at the State Board of Health Laboratories.

CONDITIONALLY APPROVED. Indicates a public water supply that from a bacteriological standpoint is safe but which has some sanitary deficiency in construction or equipment, such as no well top seal, open exposed reservoir, cross connection, bypass, emergency intake; or, in the case of a water purification plant, no filters, inadequate mechanical equipment lack of laboratory testing equipment. In most cases the authorities have been given a definite period of time to remedy such deficiencies and failure to accomplish this will result in complete disapproval of the water supply.

NOT APPROVED. Indicates a public water supply which, because of structural and equipment defects, poor operation, or unsatisfactory bacteriological analyses, is not safe for drinking purposes.

PUBLIC WATER SUPPLIES APPROVED

Source—Ground Water

Alba	Humansville	Portageville
Albany	Huntsville	Potosi
Anderson	Ironton	Republic
Appleton City	Jackson	Rich Hill
Ash Grove	Kahoka	Richmond

Aurora
Ava
Bolivar
Branson
Buffalo
Burlington Junction
Cabool
California
Campbell
Carterville
Carthage
Chaffee
Chamois
Charleston
Concordia
Crane
Crystal City
Deering
Dexter
Eldon
Excelsior Springs
Farmington
Greenfield
Herculaneum
Kennett
LaGrange
Lathrop
Leadwood
Liberty
Lockwood
Malden
Marionville
Marshall
Marshfield
Monett
Mound City
Mountain Grove
Mt. Vernon
Nevada
New Franklin
New Haven
North Kansas City
Osceola
Owensville
Ozark
Piedmont
Pierce City
Pineville
Ridgeway
Rockport
Rolla
Ste. Genevieve
Salem
Sarcoxie
Senath
Seneca
Seymour
Sikeston
Skidmore
Stanberry
Steele
Sullivan
Tarkio
Thayer
Vandalia
Verona
Versailles
Webb City
West Plains
Willow Springs
Windsor

SOURCE—SURFACE WATER

Bethany
Bowling Green
Brookfield
Brunswick
Cameron
Canton
Carrollton
Chillicothe
Edina
Fayette
Gilliam
Hamilton
Hannibal
Hermann
Higginsville
Holden
Independence
Jefferson City
Joplin
Kansas City
Kirkwood
LaPlata
Lees Summit
Louisiana
Macon
Marceline
Maryville
Milan
Moberly
Monroe City
Odessa
Palmyra
Paris
Parkville
Perryville
Raytown
St. Joseph
St. Louis
Savannah
Sedalia
Slater
Smithville
Springfield
Sugar Creek
Trenton
Unionville
Wellsville

PUBLIC WATER SUPPLIES CONDITIONALLY APPROVED

SOURCE—GROUND WATER

Auxvasse
Benton
Bloomfield
Bonne Terre
Carl Junction
Caruthersville
Centralia
Cole Camp
Columbia
Desloge
DeSoto
Doniphan
Eldorado Springs
Elvins
Flat River
Forest City
Fulton
Gallatin
Granby
Hayti
Jasper
Montgomery City
Neck City
Neosho
New Madrid
Oregon
Oronogo
Pacific
Purcell
St. Francois
St. James
Salisbury
*Sweet Springs
Troy
Washington

SOURCE—SURFACE WATER

Boonville
Butler
Cape Girardeau
Clayton
Clinton
Ferguson
Glendale
King City
Kirksville
Lexington
Maplewood
Mexico
Plattsburg
Pleasant Hill
Richmond Heights
St. Charles
St. Louis County
Shrewsbury
Uniondale
University City
Valley Park
Warrensburg
Warrenton
Webster Groves

PUBLIC WATER SUPPLIES NOT APPROVED

SOURCE—GROUND WATER

Cassville
Fairfax
Festus
Fredericktown
Hopkins
Lanagan
*Lebanon
Maitland
Mansfield
Noel
*Puxico
St. Clair

SOURCE—SURFACE WATER

Clarksville
Glasgow
Grant City
*Harrisonville
Lamar
**Lancaster
**Memphis
*Popular Bluff
**Princeton
Shelbina
**Spickard
Union
**Weston

*Constructing improvements to water supply.
**Used for fire protection only.

SUMMARY

Public Water Supplies..... 217
Public Water Supplies Approved..... 133
Public Water Supplies Conditionally Approved..... 59
Public Water Supplies Not Approved..... 25

HOME NURSING CLASSES.

One of the most valuable services rendered to the community by a public health nurse is her instruction in Home Nursing and Child Care. Every home has sickness of a more or less serious nature at some time during the year, and most homes have babies or small children who need special care and attention. Not every home can afford to employ a graduate nurse every time a member of the family becomes ill, and such services are not always necessary if the mother or older daughters in the home have had some instruction in home nursing.

CLASS IN HOME NURSING, HANNIBAL, MO.—MISS ANN PRITCHETT, R. N. INSTRUCTOR

The public health nurses are all prepared to give this instruction to groups of mothers, to high school students, or to girls' clubs as a vacation activity. The State Board of Health has prepared a series of eight lessons in Home Nursing and Child Care for Mothers, and to those who satisfactorily complete the work contained in this outline a certificate will be awarded.

A series of lessons for young girls known as "The Little Mothers Club" booklet is available and special certificates will by the State Board of Health to all girls who attend at least eight classes and satisfactorily pass an examination at the close of the course. Many schools of the state are making this course compulsory for their Junior High School students. The American Red Cross also has a very complete text on Home Hygiene and Care of the Sick. Many high schools include this course in their curriculum, and give high school credit for the work.

Some of the Little Mothers' Classes "borrow" real live babies for their demonstrations and others are content with the "Chase Dolls." Every "Little Mother" is pledged to her club to "do some kindness for a little child" every day and those little girls who are so unfortunate as not to have younger brothers or sisters usually volunteer their services to some busy mother in the neighborhood.

The lessons for Mothers Clubs include instruction on prenatal care, preparation for home delivery, home nursing in contagious diseases, and the care and feeding of well babies and children, as well as many other subjects of interest to mothers. If your community would like to take advantage of these lessons, ask your local public health nurse to organize a class for you.—P. McI.

CAMP AND RESORT PERMITS NECESSARY

During the past year considerable time and effort has been spent by the Division of Sanitation of the Missouri State Board of Health in securing satisfactory camp and resort sanitation. Seven hundred forty-six camp and resort inspections (including reinspections) were made in 1929, and recommendations made where sanitary defects were found. Practically every camp and resort in the state was inspected sometime during the year, and many of them several times.

According to our records there were, in 1929, approximately 600 camps and resorts operating in the state. Of this number, only 324 had permits as required by the State Board of Health regulations. These regulations are compulsory and are being enforced this year. Inspections for 1930 permits are being made as rapidly as possible and permits issued to those complying with the regulations. Camps and resorts not complying are being given sufficient time to correct whatever defects exist, and if corrections are not made within the time given the premises will be ordered closed.

The state highway department will erect standard "Approved Tourist Camp" signs at all camps and resorts approved by the State Board of Health, if such camp or resort is located on the highway system. We are advised that these signs will be ready for distribution about June 1st. Camps and resorts that have been approved and have received permits at that time will receive their "Approved Tourist Camp" signs without delay.

WAR WITH THE GERMS

Ross L. Laybourn

Remarkable things happen when an army of disease germs invade your system. They either run races through your veins and arteries, destroy some part of your body, or dump poison into your blood which goes through the whole system and some germs work all three methods of attack at the same time. These tactics and the large families they raise make them tough customers to fight. You have your coast defenses, the skin and mucous membranes, just as a nation does to prevent hostile invasion, and the germ army must penetrate these defenses before they can do any damage. You also have a small standing army which can be moved to the point where attack threatens to impede the progress of the invaders, but this force is not large enough to win a favorable decision against the enemy. If you have been a pacifist, opposed to preparedness, and do not have a trained reserve force that can be thrown into the scrap at once in support of your regular army, the germ enemy will lay waste a lot of your anatomy and some of the damage that they do may be irreparable.

How well your troops fight will depend upon who they have for a commanding officer. If you have good health and vitality, he will be "General Resistance" and he is good, but if old "General Debility" is in command, look out! Some health faddists would have you believe that General Resistance is the whole show and he is an important part of your defending forces, but he cannot defeat the enemy singlehanded. He must have a large army that can fight to win the war. Scientists call your troops immunity and it is the soldiers of this army, ably commanded by General Resistance, that enable you to resist the germ bandits when fully exposed to their attacks. Your troops are divided into special services with definite duties to perform, just as the infantry, calvary, artillery, tanks, engineers, and other branches in a national army have special uses. Some of your troops disable germs, others force them to collect in clumps, some guide the white blood cells (the tanks of immunity) to these clumps and others (chemical warfare service) neutralize the poison attacks launched by the germs.

The First Division of your immunity army is called actively acquired immunity by the scientists because your body takes an active part in the training of these troops. This division is made up either of veteran troops which were trained by experience in previous combats with this same germ army or, if you have had no previous trouble with this particular variety of germs, may be made up of troops which have not been under fire,

but which have received thorough peace-time training in the duties which they will have to perform in combat. If this Division is made up of veteran troops, it is due to the fact that they have had a previous war with this same germ army. In other words, you were unprepared to defend yourself against these germs in the past and you have had the disease which they produce. As a consequence of this previous campaign, your body has been trained to defend itself against them and the fact that you are now alive testifies to the fact that your troops were good fighters when they once got started.

"Why can't we produce this sort of protection without the person actually having the disease?" asked the scientists when they first found out how this immunity to disease came about and, in true scientific fashion, they went to work to find out why. They first succeeded in protecting people against typhoid fever in 1894 and this artificial protection came into general use at the time that the disgrace of typhoid fever in the Spanish-American and Boer Wars was still fresh in everyone's mind. Artificial protection against typhoid fever is accomplished by putting a large number of typhoid germs in a weak salt solution and then killing them by heat, after which they are injected under the skin in three small doses a week apart. These killed typhoid germs are very much like the soldiers taking part in a sham battle. They cannot multiply and they cannot cause typhoid fever, but the sham battle that follows their injection teaches your body how to handle an attack by live typhoid germs without allowing them to do your body any damage. Then, when live and ambitious typhoid germs do come along, your actively acquired immunity army puts them out of action before they can do any damage. It takes the body several weeks to build up this defense following the injections of the vaccine, but when this has once been done, the protection lasts for a long time. Your physician can give you treatments which will train your body to protect itself against diphtheria, typhoid and para typhoid fevers, bubonic plague, Asiatic cholera, whooping cough, scarlet fever, rabies, and smallpox. Some of these treatments are not as efficient as the typhoid fever protection, but they are all of considerable value in helping you defend yourself against attacks of these diseases.

The Second Division of your immunity army is known as passively acquired immunity. These troops are given this name because your body has no part in their training for they are furnished by your allies. Diphtheria gives us a good example of the tactics of passively acquired immunity. Diphtheria germs usually entrench themselves in the nose and throat and do their greatest damage by throwing off a poison which goes to all parts of the body in the blood. This poison damages certain parts of the body, among others, the nerves that control the heart. The presence of this poison, called toxin, causes the

body to start the development of a defense, just as in the case of the typhoid vaccine described above, but it takes several weeks to complete this protection and the diphtheria toxin works so fast that it has killed or maimed the victim before the body can launch a counter attack.

When this characteristic of diphtheria was first understood, the scientists again asked: "Why can't we borrow the immunity of some person or animal that is already protected against diphtheria and use it to help the victim of this disease defend himself?" In doing this, they called upon men's faithful old ally, the horse. Perfectly healthy horses are given many small injections of the diphtheria poison and as a result, the animal's body produces large quantities of an antidote for this poison which is known as diphtheria antitoxin. When the horse's blood contains all the anti-toxin that he can possibly produce, the animal is bled and the serum, or clear part of the blood, which contains the anti-toxin, is separated from the clot, concentrated into the smallest possible volume and kept ready for use when needed. The victims of diphtheria are given this immunity, borrowed from the horse, which neutralizes the diphtheria poison without the slow, dangerous process of waiting for the body to train its own reinforcements.

You will sometimes hear a person say: "Johnny had diphtheria and the serum which they gave him left him with a weak heart." Nothing could be further from the truth, because there is nothing in diphtheria antitoxin which can damage the heart. Damaged hearts following diphtheria simply mean that diphtheria antitoxin was not given until after the diphtheria poison had already done its damage, or the amount of antitoxin given was not sufficient to neutralize all the poison produced by the diphtheria germ. The use of antitoxin has reduced the death rate from diphtheria from around ninety per cent to about ten per cent and the people who now die of diphtheria are the ones who did not get the antitoxin soon enough or in large enough quantities.

Antitoxins and similar serums are used in treating diphtheria, scarlet fever, tetanus (lock jaw), botulism (food poisoning), epidemic meningitis, gas gangrene, and the bites of poisonous snakes. Strange as it may seem, snake venoms belong to the same class of poisons as the diphtheria and scarlet fever poisons and it is possible to develop antidotes for these venoms in exactly the same way as is done in developing antidote for the diphtheria poison.

All these treatments belong to the Second Division, passively acquired immunity, and they differ from the First Division, actively acquired immunity, in that they are used to treat diseases which have already developed because the First Division was not available. In other words, they are thrown into the

scrap to help the standing army hold the line until the human body can train its reserves and throw them into the combat. The protection given by passively acquired immunity only lasts for about three weeks or less, while the protection given by actively acquired immunity usually lasts for from three years to life.

There is nothing mysterious about the prevention and treatment of the catching diseases, for the principle of combat and the tactics used are similar to those employed in any other disagreement in which the belligerents resort to force of arms to obtain a decision. First comes the attempt to avoid hostilities by preventing contact between susceptible persons and dangerous germs. This is accomplished through the use of sanitary measures for the prevention of the spread of disease germs from the person who is suffering from a disease or who has just recovered from an attack and has not yet freed himself of his germ invaders. Next, the individual should always be prepared to defend himself against attacks by using the training of actively acquired immunity and by keeping his system in the best possible condition. If these precautions are neglected or the defenses are faulty and an army of germ raiders cross the frontier, passively acquired immunity troops, furnished by the allies, are used to hold up the advance of the invading germs until personal immunity troops are ready to carry on and win the engagement.

When a fellow mashes his thumb he hurts all over. Likewise a toothache makes the whole body uncomfortable. One sick man has the same baneful effect on the entire community in which he lives. Not only is the sick one unable to provide for himself but others are withdrawn from productive pursuits to care for him and those left in active production have to earn for themselves and the sick one too. The greater the number of sick the heavier the burden on all the well.—Illinois Health Messenger.

Hands are the chief germ carriers. A child should early form the habit of always washing his hands before touching food, immediately after each visit to the toilet, and whenever else they may become soiled and need it. Cleaning the nails should be a regular part of washing the hands, or they are not really dirt-free and germ-free. Sometimes a tired or weeping child has his troubles literally washed away by someone gently bathing his face and hands.—Better Health.

The extraordinary prosperity which has been witnessed in the United States is, in large measure, the result of the control which has been exercised over disease. No greater service can be rendered to insure the general peace and prosperity than to improve the world's health.—Dr. Dublin.

FEDERAL AGENCIES ISSUE STATEMENT REGARDING HOME REFRIGERATORS

To allay the anxiety aroused in the minds of owners of home refrigerating systems by newspaper accounts of deaths due to "gas refrigeration," three Federal agencies, the U. S. Public Health Service, the U. S. Bureau of Standards, and the U. S. Bureau of Mines, have issued a statement setting forth the facts regarding this danger.

According to the report, all refrigeration systems in practical use at the present time depend for their operation upon the repeated compression and release of pressure of a gas which is confined in a circulating system within the refrigerator. Defects in this circulating system allow the gas to escape and mix with the surrounding air in the same way that illuminating gas escapes from defective lines. For many years, ammonia was the only gas used for refrigeration, but recently other gases have come into extensive use for this purpose. Among the most important of these are sulphur dioxide and methly chloride. None of these refrigerating gases can be breathed with impunity, but none are violent poisons when breathed in small quantities for short times. Sulphur dioxide and ammonia have strong odors which are easily recognized and are so irritating that no one will continue to breathe them if they can help it. Methyl chloride has a faint, pleasant odor which would not awaken a sleeping person and which might not be recognized by one who was awake. Because of this characteristic of methyl chloride, these agencies consider that there is greater hazard in this gas than in the use of other refrigerating gases. Most of the trouble attributed to methyl chloride has occurred in multiple refrigerating systems in apartment houses where a single compressor delivers the compressed gas to individual refrigerators in different apartments by means of pipe lines.

This report states that the majority of individual refrigerators of the electric type use sulphur dioxide as a refrigerant and that practically all those which are operated by an illuminating gas flame use ammonia gas as a refrigerant, since the odor of these gases is very easily detected, even when they are present in very small amounts, there is a very slight hazard in the use of refrigerators employing either of these gases.

Studies are being made with a view to reducing the hazard from methyl chloride and, at the present time, these agencies are not prepared to say whether the difficulty will be overcome by eliminating the use of methyl chloride, mixing it with a gas which has a pungent odor or by improving the construction of the circulating systems which carry the gas. The report closes by calling attention to the fact that the number of serious accident due to home refrigerating systems has been extremely small compared to the number of refrigerators which are in use and that improvements may be expected to materially reduce the small hazard which does exist.—R.L.L.

STATISTICAL REPORT OF DIVISION OF SANITATION 1929

Public Water	Field Inspections	Plans Approved	Reports	Final Inspections	Bacterial Analyses	Chemical Analyses	Special Investigations	Conferences Public Talks	Permits Issued
Public Water Supplies	288	10	14	3	7,266	139	16	102	
Railroad Water Supplies	29		175						
Sewerage Systems	114	12	10	2			9	60	
Camps and Resorts	1,283							210	370
Milk Sanitation	2,128		3		Ordinances Adopted 18	Milk Ratings 31		385	
School Sanitation	164							57	
Miscellaneous	72				2,316			102	
Swimming Pools	14								

Days in field 1,171. Average days per man per month 15.8.
Miles traveled by men: Auto 96,062; by train 11,895.

MISSOURI WATER AND SEWERAGE CONFERENCE

CONTROL OF TASTES AND ODORS IN WATER SUPPLIES

This is the time of the year when the water works superintendent should guard against algae growths that may cause undesirable tastes and odors in the water supply later in the season. Particular importance should be given to this matter by those cities which secure their water supplies from lakes and impounded reservoirs. Treatment by copper sulphate has proven successful in most cases where difficulty has been experienced in the past. However, this treatment should be started before the algae growths have become too numerous. The State Board of Health will provide, upon request, instructions relative to a simple method for determining quantitatively the existence of algae in the raw water and also detailed instructions for treating the water with copper sulphate. Prevention is better than cure, be on the look out for an increase in algae and if you need instructions for the control of this difficulty write the State Board of Health.—W.S.J.

MISSOURI WATER AND SEWERAGE CONFERENCE NOTES

We wish to call your attention to the State Board of Health annual report on public water supplies published in this issue of the News. The information in this report will be of considerable satisfaction to some cities and should be food for thought for others, and we hope thought which will stimulate action by those cities that do not have approved supplies. The progressiveness and health of your community is measured directly by the quality of its water supply. It seems unfortunate, if not a catastrophy, that any city would tolerate a public water supply that is not absolutely safe.

Final inspection and approval by the State Board of Health has been made of the new water purification plant at Harrisonville. This is the second new water purification plant completed in Missouri in 1930 and constitutes a needed and decided improvement to the water supply of this city.

Plans for a water system at Platte City have been submitted and approved by the State Board of Health. Platte City has a population of 558, 1920 census. Apparently the small progressive cities in Missouri can provide a safe public water supply when the importance of the same is realized. All these smaller cities need is a realization of the benefits of a safe, adequate water supply.

Final inspection and approval by the State Board of Health has been made of the sewerage system for Fredericktown. This was one of the largest cities in the state without sewers, but no longer retains that unenviable position.

The members of the Missouri Water and Sewerage Conference will be glad to learn that the Executive Committee has authorized the printing of the proceedings of the last meeting. Obviously, these proceedings will be more valuable and attract wider interest when printed rather than mimeographed. The proceedings will be available for distribution about May 1st.

SOCIAL HYGIENE

Contributed by Mrs. Robert McE. Schauffler, Chairman Social Hygiene, Missouri Branch National Congress of Parents and Teachers

SOCIAL HYGIENE INFORMATION

Service supplied through the Social Hygiene Chairman, Mrs. Robert McE. Schauffler, Room 400, 1020 McGee Street, Kansas City, Missouri.

LOAN PACKET. Consisting of 10 pieces of literature and suggestions for the use of material. Packets are loaned for two months or longer or same may be purchased.

SPEAKERS BUREAU. Speakers may be secured for prorated traveling expense and entertainment, sometimes a small honorarium is paid.

CONSULTATION. Service is free.

Attention is called to the free service of private and public libraries, also the Missouri State Library Commission which makes accessable to all, even the remote rural parent or teacher, these resources for the asking.

There is one point in which all men might be born free and equal. That is in regard to health. If a child has clean blood, a good brain, and a mother who knows how to care for herself and for him he is equal to any other child on the face of the earth. —Roosevelt.

The parent who depends upon threats and punishments to obtain desirable conduct in the child is often making heaps of work for the judge and the policeman.

When cheating the child is held in the same contempt as cheating the adult, the cynicism of adolescence will be less common.

"Science and art are helpless, strength worthless, wealth useless, eloquence vain, if Health be wanting."

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman Mental Hygiene, Missouri Association of Parents and Teachers.

MENTAL ATMOSPHERE OF THE HOME

"The mental atmosphere of the home is entirely dependent upon the personal relationship of those who go to make up the family circle. The physical setting may be well nigh perfect, all in the family may be courteous and well mannered; the moral standards may be above reproach; yet the mental atmosphere may be cold and forbidding. Such a household may be entirely lacking in that spirit which tends to make individuals join forces and work toward a common goal. There may be no joint interest of responsibility, but, instead, each one strives kindly, firmly, and courteously toward his own objective, irrespective of those with whom he is living. Under such conditions, jealousy, envy, feelings of inferiority are lurking about ready to force their way into the minds of the younger group; while unhappiness, lonesomeness, and that feeling of the futility of effort is bound to take possession of the older members of such a household. Such a situation can only be avoided when each member contributes some of his interest and enthusiasm to the common good of the group. This does not mean that independence is to be sacrificed for sentimental reasons, but rather that it be established by assuming an early responsibility for the welfare of someone else besides self."

From "Mental Hygiene and the Home" by Dr. Douglas A. Thom, in The Journal of the National Education Association.

SEEN AND HEARD

"People used to think that 'children should be seen and not heard.' Now we are beginning to realize that children should not be needlessly repressed. They are entitled to notice and for adults to disregard them is as damaging to their personalities as making them the center of attention."

From "Old and New Versions of Child Training" in the monthly Bulletin of The National Committee for Mental Hygiene.

Fatigue is often the underlying cause of the difficulty in the case of both the parent and the child, and mental fatigue, from worry over conditions about which nothing can be done at the time, is even more tiring than physical work, and is harder to overcome. One can rest-up quickly from physical fatigue, but mental fatigue is more difficult to combat.—Dr. LeRoy A. Wilkes.

WHAT THE EDUCATED PERSON SHOULD KNOW ABOUT HEALTH

Livingston Farrand, President of Cornell University, has outlined the following "ten commandments" with which every intelligent person should be familiar:

1. He should have a knowledge of the physiological basis for sound health habits, such as regular and sufficient hours of sleep, right posture, suitable exercise and proper elimination.
2. He should know the types and amounts and proportions of the various food elements essential to the proper nurture of his body.
3. He should have an acquaintance with the principles of normal mental action and the conditions underlying the more common variations from normal state of mind.
4. He should have a general understanding of the sex instinct in man—its stages of development, its normal expression and the values and penalties attaching to it.
5. He should have a knowledge of the factors determining infection and resistance and of the principles of artificial immunization in the case of certain of the common infectious diseases.
6. He should have enough knowledge of the causes and prevention of the degenerative diseases to offer a prospect of passing through middle life without a breakdown.
7. He should know and therefore be armed against health hazards lurking in the environment, such as polluted water and milk supply, congestion in housing, poisonous dusts of certain industries, infected soil, etc.
8. He should appreciate the necessity for frequent medical and dental examination.
9. He should have an intelligent basis for choosing wisely his medical and dental advisers, and for realizing that the modern practice of medicine is grounded on sicence, and not on mystery, fancy and tradition.
10. He should have a knowledge of the important health problems facing the community, of the methods of attacking those problems, and of the results to be expected from intelligent community action in the public health field.

If any one thing, however, has been settled in this realm of thought by unison of opinion, it is the State-wide extension of the interest in the maintenance of life and health. The advancement of that interest, like the advancement of education, is a function of the State at large.—Chief Justice Cordozo, N. Y. Court of Appeals.

OF PUBLIC HEALTH INTEREST

Dr. James Stewart, State Health Commissioner, addressed an interested audience of about one hundred teachers and members of the school boards of Henry County on the subjects of School Hygiene and the Sanitation of School Buildings at Clinton on March 31st.

Dr. Thomas Parran, Jr., Assistant Surgeon General, United States Public Health Service, has accepted the position of State Health Commissioner of New York, succeeding Dr. Matthias Nicoll. Dr. Parran served as Director of Rural Sanitation with the State Board of Health of Missouri, from 1921 to 1923.

Frequently, the record forms and supplies furnished by the State Board of Health are criticized, but very seldom do the health workers take time to make favorable comments on changes or new pamphlets which are produced. Miss Cockrell, Red Cross itinerant nurse for Lafayette County, is one of the few who always mentions the changes and her comments are much appreciated by the staff. She writes: "The nutrition cards (C. H. No. 8) are much more to my liking than the old paper slips. The children can take care of a card more easily. The outline of food values is an excellent thing and quite in line with up to date thinking. I'm strong for this little yellow card because I find here and there a teacher who falls for its use in motivating nutrition programs in connection with the regular school work. Form C. H. No. 4 (the school examination card) in its new dress also gave me a thrill. I like it immensely."

Miss Pearl McIver has just completed a study of the preparation and general qualifications of the rural public health nurses in Missouri, and the results are very encouraging. Thirty-nine of the forty-seven rural nurses are high school graduates, and of that number nineteen have had at least one year's college work and four of them have college degrees. Eight have not completed their high school work, but of these eight all but two have been in the work for more than five years. Eighteen have had at least a four months post graduate course in public health nursing, and thirteen have had summer courses varying in length from six weeks to two months. Fourteen have had no special public health courses, but have secured their experience on well supervised staffs. The average number of months spent in one position is twenty-seven, and the average number of years of experience of the present staff is four and one-half. Thirty of the nurses are members of the National Organization of Public

Health Nursing, and eighteen of them are also members of the American Public Health Association, Four of the group were away on leaves of absence last year for further post graduate study.

Do we fully realize that our health and that of our family is not safe unless the health of our immediate neighborhood and of the community in general is good? In order that human lives be healthy, one can not live a life constantly isolated from others. All must be surrounded with a safe and clean community life which can be accomplished by neighborliness."

"By a campaign for mental hygiene is meant a continuous effort directed toward conserving and improving the minds of the people; in other words, a systematic attempt to secure human brains, so naturally endowed and so nurtured, that people will think better, feel better and act better than they do now."—Wisconsin Health Bulletin.

Diseased tonsils, tonsils that become periodically inflamed are likely to furnish to the blood stream quantities of poison sufficient to bring about serious disturbances, such as acute rheumatism, valvular disease of the heart and kidney disorder. A child with repeated attacks of tonsilitis should be taken to the family doctor or specialist for examination and treatment.—Florida Health Notes.

Slowly, but very surely, public health workers are instilling into the minds of the general public the idea that many of their sufferings spring from neglect of the simple laws of health, for one cannot disregard these laws and keep well. The time is coming, we believe, when society will adopt universal health a an ideal—Florida Health Notes.

May I add my voice to those who are urging the mothers of children to take advantage of the opportunity for safeguarding them against diphtheria. With the wonderful records of success of the modern treatment, there can be no reason for not having children immunized from this frightful danger save the poor excuse of inertia. No mother would allow inertia to interfere with her rushing into a burning house to save a child. Nor would she "put off till later" defending a little son or daughter from the attack of a wild animal. Neither fire nor wild beasts are more dangerous to children than diphtheria. No mother should put off the visit to the clinic which insures the children's safety.—Dorothy Canfield.

MONTHLY PROGRESS REPORT—STANDARD MILK ORDINANCE CITIES

The table below indicates the ratings made by the State Board of Health on Standard Milk Ordinance cities during March. For the purpose of comparison the previous milk ratings of the cities are also shown.

City		Date	Retail Raw Milk	Raw Milk To Plant	Pasteurized Milk	Enforcement
Ash Grove	Previous Rating	12–27–29	69	.....	.....	None estimated
	Last Rating	3–13–30	78	.....	.....	93
Carthage	Previous Rating	9–24–29	89	.....	.....	97
	Last Rating	3–19–30	91	.....	.....	80
Independence	Previous Rating	5–9–29	70	54	50	41
	Last Rating	3–5–30	89	69	92	None estimated

COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF FEBRUARY 1929 AND 1930.

Disease.	1929	1930
Chickenpox	314	542
Diphtheria	215	164
Epidemic Sore Throat	29	6
Erysipelas	10	1
Influenza	982	168
Malaria	37	32
Measles	1123	518
Meningitis	67	76
Mumps	210	151
Pneumonia	122	107
Poliomyelitis	3	3
Rabies in animals	14	9
Scarlet fever	428	554
Smallpox	198	336
Tetanus	0	0
Trachoma	2	9
Tuberculosis	213	227
Typhoid fever	7	7
Whooping cough	258	154
Undulant fever	0	12
Ophthalmia	1	2

MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II MAY, 1930 NO. 9

Published Monthly by

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JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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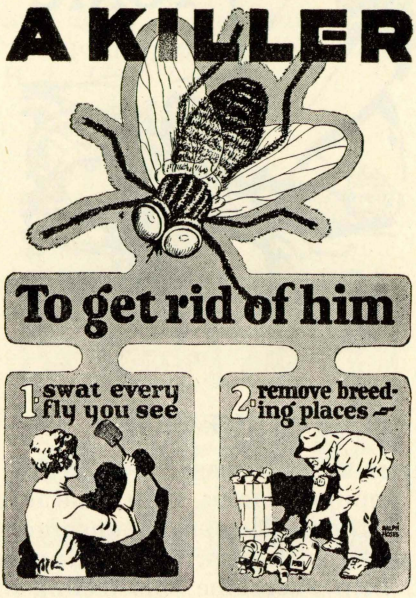


THE FIRST FLIES THAT APPEAR IN THE SPRING ARE THE ANCESTORS OF THE MILLIONS THAT ANNOY US AND MENACE OUR HEALTH IN THE LATE SUMMER. DESTROY THEM AND CLEAN UP THE FILTH IN WHICH THEY BREED!

"Kill a fly in spring, you've done a splendid thing,
Kill a fly in May, you've kept thousands away,
Kill a fly in June, they'll be scarcer soon,
Kill one in July, you've killed just one fly."

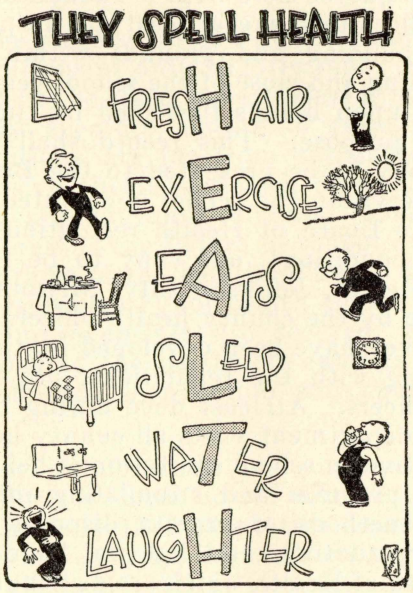
—*Anon.*

SPRING FEVER

"Spring fever is not a disease. It's a gift from the Gods!" says one of the popular comic strip characters as he settles himself for a nap in the gentle spring sunshine. There are times when we can all agree with him, and, fortunately, the fresh air and sunshine will help overcome this feeling of inertia. There really is no such malady as spring fever. The lack of ambition and "pep" that goes by the name is due to lowered vitality and is the result of poor ventilation, insufficient exercise in the open air and sunlight and a lack of green foods throughout the winter months. Fresh vegetables, with their vitamines and minerals, are not a luxury, but an essential part of a well-balanced diet. They have superseded sulphur and molasses as a "spring tonic" and this newer and pleasanter tonic should be taken daily the year 'round.

Sulphur and molasses appeared with the first robin when grandfather was a boy. This perennial "spring tonic" was considered a sure cure for spring fever and it did have the virtue of arousing the youngsters to renewed heights of physical and mental vigor in avoiding the sticky, gritty mixture. Like red flannel underwear, a bag of asafetida hung around the neck to ward off disease, a horse chestnut or a potato in the pocket to

prevent rheumatism, and a stocking that had been worn too long wrapped around the neck to cure a sore throat, sulphur and molasses have been discarded by intelligent people. In those days, symptoms were treated with no thought of the cause of the trouble and the more disagreeable the remedy, the greater seemed to be the assurance of its effectiveness. A seasonal schedule of unpleasant treatments were religiously adhered to and woe be unto the youngster who objected too strenuously to these homely ministrations—the woodshed was always close at hand. Progress in the science of medicine and a widespread knowledge of the underlying causes of human ailments have forced these old remedies into the discard and humanity gets along better without them. Good health and vitality are not a matter of nauseating doses of medicine at prescribed times of the year, but are produced by proper living and diet throughout the entire year.—R. L. L.



RURAL SCHOOL SANITATION REPORT FOR 1929

W. A. McGRAW

Chief Sanitary Assistant, State Board of Health of Missouri

Satisfactory and adequate sanitation of rural schools in Missouri presents a serious problem to health officials due to the magnitude of the work, involving over 8,000 schools, and the lack of adequate sanitary facilities at a large majority of these schools.

In addition to the health educational advantages of approved sanitation equipment for rural schools, the absence of these safeguards has been responsible for many serious filth-borne epidemics, as well as a reduction in the physical efficiency of the pupils due to poor lighting, ventilation, and heating.

The State Board of Health program for obvious reasons has been largely supervisory in nature, working in conjunction with, and through the deputy state health commissioners. Regulations and standards of sanitation have been developed by the State Board of Health, which contain a section regarding school inspections quoted herewith: "It shall be the duty of the county health officer to make at least one inspection each year of each school building and grounds within his jurisdiction between the opening and close of the school year, and record the conditions found upon blanks furnished by the State Board of Health for that purpose. This record shall be made out in triplicate: one copy to be presented to the Board of Directors under whose supervision the school is operated, together with a copy of the State Board of Health regulations outlining satisfactory sanitary conditions; one copy to be forwarded to the State Board of Health, Jefferson City, Missouri; and one copy to be kept on file by the county health officer." The forms for recording the survey have been developed by the State Board of Health, and along with the regulations, are furnished to the county health officers. At least once during the year a representative of this department visits all county health officers and a conference relative to school sanitation is held for the purpose of outlining the program and stimulating interest. Sketches showing proper methods of excreta disposal, construction of wells, heating, ventilating, and lighting have been developed by the State Board of Health which are distributed by the health officers to the various school boards throughout the state.

The results of this program during 1929 were excellent in many counties. Representatives of the State Board of Health held 97 conferences with county health officers relative to school sanitation and inspected 164 schools in company with the local health officers. Reports of school inspections were received

from 65 counties in which 4,357, or approximately 52 per cent of all rural schools, were inspected.

In order to secure an accurate picture of sanitary conditions from the data secured from the sanitary survey of these 4,357 schools, the following method of scoring school sanitation was devised. Reference is made to Table I, which indicates the nine items of school sanitation involved in the scoring system. As shown in this table, each item is given an arbitrary possible score according to its importance from a public health standpoint. The sum of these possible scores is 100. The per cent of inspected schools in the state complying is shown under each item of sanitation followed by the score determined by multiplying the per cent of schools complying by the possible score. As an example, there were 4,357 schools surveyed in the state and 2,047, or 46.9 per cent, of these complied with the State Board of Health regulations as regards drinking water supplies. The possible score for complete compliance would be 40, 46.9 per cent of 40 is 19.0 or the score for this item for the entire state. In the last column the sum of the nine scored is shown as the state score of school sanitation. Sanitary scores have also been computed for the schools surveyed on a county basis, and these will be supplied upon request.

Although the state score of 54.8 for rural school sanitation is based on conditions at only slightly more than one-half of all the rural schools in the state, nevertheless it is believed that this provides a fairly accurate picture of rural school sanitation. Obviously, conditions are far from satisfactory and in many cases the persuasive efforts of health officials will not be sufficient to secure needed improvements. One of the greatest obstacles to progress is the failure of school boards to carry out the recommendations of the health officer. In a few instances it will probably be necessary for health officers to close the worse schools before improvements are secured, not only to force action with regard to the particular cases in question, but for the desirable influence such action will have on other school boards.

The Division of Sanitation will continue to encourage and supervise the efforts of local health officials toward the annual survey of all schools in their respective counties. The greatest difficulty in this undertaking lies with county courts which will not remunerate the health officer for time and travel incident to school inspection work. Yearly scoring of rural school sanitation will be computed for each county and the state at large so that the actual status of school sanitary conditions will be available for all concerned, and a valuable comparison with past conditions possible.

TABLE I

SCORING RURAL SCHOOL SANITATION ITEMS

School Site, Possible Score 5		Building, Possible Score 5		Water Supply, Possible Score 40		Toilets, Possible Score 20		Ventilation, Possible Score 5		Heating, Possible Score 5		Lighting, Possible Score 10		Cleaning, Possible Score 5		Personal Hygiene, Possible Score 5		Score for Entire State
Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	Per cent complying	Score	
88.3	4.4	85.7	4.3	46.9	19.0	35.7	7.0	95.7	4.8	49.6	2.5	54.2	5.4	91.6	4.6	55.4	2.8	54.8

HEALTH DETECTIVE WORK DONE BY THE STATE BOARD OF HEALTH LABORATORIES

Forty-four thousand, sixteen criminal identifications and investigations of the germ desperadoes which menaced the health of the citizens of Missouri were made by the detective force of the State Board of Health Laboratories during 1929. Twenty-six thousand similar investigations were made in 1928. This increase does not mean that the state is faced with a new sort of crime wave, for general health conditions were really better in 1929 than in 1928, but it does mean that physicians and health officers are giving more and more attention to the prevention of disease and the contagious disease laboratory plays an important part in such work. Every case of communicable disease reveals the misdeeds of tiny germs and these little criminals leave clews and marks of identification behind them just as their human racketeer and gangster counterparts do. The bacteriologist works out these clews and trails and identifies the kind of germ which is causing the illness of the patient, and also secures information which will enable the physician and health officer to keep them from assaulting other susceptible people.

In addition to the identification of dangerous bacteria, the laboratories co-operate with the Division of Sanitary Engineering of the State Board of Health by making weekly checks on the sanitary quality of the water supplies of about seventy cities in the state which secure their water from highly contaminated sources, such as rivers and lakes. The information obtained through these examinations enables the water plant operators to apply the treatment necessary to assure the consumers of safe drinking water at all times.

The laboratories also contribute to the prevention of blindness in the state by the manufacture and free distribution of wax ampules of one per cent silver nitrate solution which is used in the eyes of new-born babies to prevent "babies' sore eyes" and the blindness which so often follows such infections. By sealing the silver nitrate solution in air-tight wax capsules, the solution remains in usable condition for a long time and offers the physician an extremely convenient method of applying this treatment as required by law when presiding at the arrival of a future citizen of the state. Over 11,000 of these ampules were distributed to the physicians of rural Missouri during 1929 and the entire cost of this work was less than the amount which is paid by the state to two blind pensioners in a single year. That this work is paying dividends is shown by the steady reduction in the number of cases of infantile blindness reported during the

three years and a half in which these ampules have been distributed.

It is difficult, if not impossible, for a physician to make up a package containing a specimen for diphtheria, tuberculosis, or other communicable disease examination which will meet the postal regulations, and specimens collected in any sort of a tube or bottle which may be at hand do not always give the best results. The laboratories, furnish mailing containers for the collection of specimens in order to assure the victims of disease of prompt and efficient service. When there are five or more doctors practicing in a community, these containers are placed in a drug store where the physicians can obtain them as needed and they are sent direct to the physician in the smaller communities.

The following summary gives an outline of the volume and kind of work during 1929:

Diptheria	2,089
Diphtheria Virulence	3
Gonorrhea	1,274
Malaria	486
Milk	2
Miscellaneous, including meningitis carrier cultures	3,075
Rabies	176
Syphilis:	
(a) Kahn:	
(1) Blood	9,022
(2) Spinal Fluid	98
(b) Wassermann:	
(1) Blood	11,263
(2) Spinal Fluid	101
Tuberculosis	2,280
Typhoid Fever:	
(a) Blood Culture	43
(b) Feces	498
(c) Widal	1,991
Undulant Fever	1,991
Vincent's Angina	38
Water:	
(a) Bacteriological	9,582
(b) Chemical	4
	44,016

OUTFITS DISTRIBUTED

Diphtheria	3,968
Gonorrhea	1,932
Malaria	1,058
Tuberculosis	3,535
Typhoid Fever:	
(a) Blood Culture	230
(b) Feces	954
(c) Widal	2,973

Undulant Fever Blood Culture	1
Wassermann	11,468
Water	12,705
	38,824
Silver Nitrate Ampules	11,695
Grand Total	94,535

Laboratories are necessary, and, though an artist without a studio, or an evangelist without a church, might conceivably find under the blue dome a heaven a substitute, a scientific man without a laboratory is a misnomer.—Frederick Soddy.

LITTLE JOE

Editor's Note: The following verse was written by a fourteen-year-old girl in the Junior High School at Joplin, Missouri, following an inspection of the Joplin water purification plant—an educational trip made by hundreds of Joplin school children each year. This young lady shows a knowledge of the functions of water purification which would put most of her elders to shame.

A typhoid germ, was Little Joe,
And here's his story, if you want to know:
He wandered around in Shoal Creek one day,
And felt himself being drawn away
By a great big pipe, on the side of the river;
Joe looked around and began to shiver.
The first thing he knew he was at the pump house
And Little Joe kept as still as a mouse;
From here he went to the dissolving box
Where he lost a friend, named Sammy Dysentery.
Joe heard some men talking about the alum,
And learned that they use two grains to every gallon.
From there he went to the reservoir,
And he thought that this would him destroy.
But he got through that, and the settling basin,
Then passed right on to the filter station.
After he left the settling place
Only twelve more germs were left in the race.
After the filter, which he could barely survive,
Only three of his friends were still alive.
He went through gravel and sand galore,
"Oh!" thought he, "I can't stand much more."
And poor Little Joe was almost gone
When the deadly chlorine came along.
So this was the end of poor Little Joe,
Who was safe in Shoal Creek twenty-four hours ago.

WHAT IS TUBERCULOSIS?

By LAWRASON BROWN, M. D.

Tuberculosis is caused by a germ called the tubercle bacillus. This germ is so small that it can ride into the body on minute particles of dust, or on the tiny droplets emitted during a cough. A thousand can pass through a pinhole. They die after exposure of several hours to sunlight and fresh air. They resist drying and freezing and can live some time in poorly lighted, poorly ventilated rooms. They grow only inside the body (of man or animal) though it is possible to grow them artificially in the laboratory. One variety, the bovine bacillus, attacks cattle, and through them, infants and children. Another, the human type of bacillus, attacks man at all ages. The lungs are most frequently attacked.

How Spread

Tuberculosis is passed from man to man at all ages by the fine droplets of sputum coughed out, and by inhaling the dust mixed with the sputum of some careless patient who has spit on the floor or street. Children soil their hands and playthings with this sputum, and so carry the germs into their mouths and bodies.

Infection and Disease

Infection means that tubercle germs have gained a foothold in the body. Infection does not mean disease. Most people, by the time they arrive at adult age, are infected. When, after a longer or shorter period (months or years), these germs increase and spread so that the person develops symptoms or becomes ill, it is said that he has the disease, tuberculosis. It is probable that many small doses of these germs are necessary to produce disease.

Tuberculosis infection apparently does little harm as long as the individual keeps in good health. In fact it seems to increase the resistance against the germ. In a certain number, due to some accident like an attack of measles, whooping cough or some other severe stress or strain, the germ seizes upon the opportunity and gets a stronger hold upon the tissues of the body. Even these individuals do not necessarily develop the disease, tuberculosis, if they heed the warning to regulate their lives properly. This is one of the reasons why everyone should have a complete medical examination at least once a year.

Forewarned is Forearmed

A slight infection with tubercle germs is usually overcome without the person's knowing anything about it. Active disease occurs mostly during the age period from twenty to forty. Children who have been exposed to the disease by living in a home where there is a case of tuberculosis or by other intimate contact with tuberculous persons, may show no symptoms until they reach young adulthood. In order to guard more closely those who have been so exposed, many physicians now urge that children should have their lungs X-rayed while they are in high school or earlier.

Prevention

Those who have tuberculosis should learn how to protect all with whom they come in contact. But there are many persons who have the disease and do not know it, while others are not as careful or conscientious as they should be. Therefore, everyone should develop habits which will tend to prevent contact with the sputum or secretions of others. For example, fingers should be kept out of the mouth, hands should be washed before meals, eating and drinking utensils used by others should be avoided unless they have been thoroughly cleansed, etc.

Equally important is it to keep fit. General good health strengthens resistance against the development of tuberculosis germs in the body. We should strive constantly to keep fit, and if this seems difficult, a physician should be consulted at once. Early discovery of tuberculosis not only makes recovery more certain but often saves many months in curing. A stitch in time saves nine.

Treatment

Tuberculosis can be healed. Generally speaking, the best place to get well is in the sanatorium. Here, under pleasant surroundings, a large number of patients make a successful fight against tuberculosis. The treatment of tuberculosis can be carried out at home, but it is more difficult. For most patients, residence at a sanatorium for at least six months is advised. Here the patient receives expert medical and nursing care; he learns to appreciate the values of rest, fresh air and good food, and how to adjust his daily life so as to overcome his handicap. The sanatorium is not merely a hospital but also a training school.

Rest

The healthy person needs exercise but there is great danger from even the mildest form of exercise for the patient sick with

tuberculosis. Prolonged rest under medical guidance is necessary for recovery. In certain cases walking, dressing, or even talking to visitors may postpone recovery. The great danger of exercise at the wrong time is seldom realized at first and often only when it is too late. It is safe to say that more patients lose their chance of recovery through ignorance of the grave danger even of gentle exercise when rest is absolutely necessary than through any other cause.

Fresh Air

Fresh air is necessary in the treatment of tuberculosis. Fresh (outdoor) air is a mild stimulant. The stimulation comes through the skin, which should be kept in perfect condition. Fresh air does not "ventilate" the lungs as one would hang out a blanket to air; in fact, fresh air benefits the lungs no more and no less than it does the ankle or hip. Deep-breathing exercises are unnecessary and may be positively harmful, for the more air breathed into the lungs, the less rest do they get, which reduces the chance of recovery or healing.

Food

Good food, like fresh air, is also essential. The proper amount of food to eat is difficult to determine. The body, when feverish, consumes or "burns" about one-third more food than when the temperature is normal. An excess of food may putrify in the bowels and cause trouble. The patient should eat as little as it is possible in order to gain gradually in weight. Too great a gain, however, may be a serious handicap. Milk, eggs, meat at one or two meals, abundance of good vegetables (some fresh), including one that grows above (cabbage) and one beneath the ground (potato), a leafy salad, desserts that are easy to digest, and raw fruit make an excellent diet. Remember that too rich a mixture of gasoline produces dirty cylinders in the gas engine and less efficiency. So it is with the "cylinders" of the body.

Knowledge

Highly necessary for him who would get well and keep well, is a very clear and exact knowledge of what he should and what he should not do. This education should be acquired from sources about which there can be no doubt. The physician can recommend many valuable articles and books, which the patient should study carefully. Ultimately, the problem of getting well and keeping well depends on the faithfulness and intelligence of the patient. A cheerful, optimistic outlook is most important. Those who pretend to be cheerful soon really become so.

Protection of Others

The patient must learn fully how to protect others. He must ever bear in mind that, if all the tubercle germs could be corralled and destroyed, the disease would soon vanish from the face of the earth. This may be impossible for some time, since some have the disease and do not know it and others have the germs in their sputum and, either through carelessness or ignorance, do not know how surely to collect and destroy them. Each patient owes it to his family, to his friends, to his associates in work and in business, to exercise every care to collect and destroy the germs. The sputum that is coughed up must be collected in special receptacles and destroyed. The best method is to burn the receptacle with the sputum. The fine droplets that are coughed out should be caught on cotton or paper gauze, which must also be burned. Anything that comes in contact with the lips must be thoroughly cleansed. The moustache must be trimmed close or, better, shaved off. Eating utensils, particularly those that come in contact with the lips, such as forks spoons, cups and glasses, require thorough washing and scalding in very hot water. This will kill all the germs upon them. Since the hands frequently touch the lips, they must be washed carefully and often. Pipes, cigarette holders and toothpicks used by the patient must not be used by others. Pillows and sheets used by the patient should not be used by anyone else until washed. Kissing is absolutely forbidden and children should not be fondled. The milk should be pasteurized if it does not come from cows known to be free from tuberculosis.

Staying Well

The prolonged care necessary to complete recovery becomes so irksome that many will not pursue it to this end. The spirit is willing, but the flesh is weak. Those who have definite tuberculous disease will have permanent scars in their lungs following recovery. Like those who limp after a fracture of the hip, so patients with scars in the lungs are also lame and must go slowly or at least keep within their limits in order not to stretch or break their scars. There is no need for worry, provided they recognize their limitations and heed them. Many patients relapse in the first two or three years after treatment. This should be the period of greatest caution, even though they may be able to spend part of it in doing some work under the physician's advice. It is wiser to postpone marriage until this period has passed. It is often better to return to the old job provided it is possible to avoid conditions that brought about the disease in the first place. It is usually not the work but the play after the end of the day's work that brings about relapse.

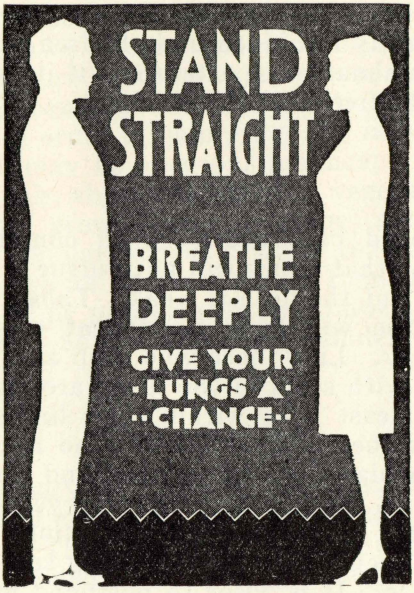
The room in which the patient who has recovered works or sleeps should be well ventilated. The best temperature for the house is from 66 to 70 degrees. He should sleep alone and pass ten hours at first, and later at least eight hours, in bed every night. A vacation every summer and, if possible, one also at the end of the winter, is necessary to maintain fitness.

He should keep in close touch with his physician and have periodic examinations and X-rays made.

—Reprinted through the courtesy of the Missouri Tuberculosis Association.

For children of high school age tuberculosis is by far the worst enemy of life and it carries off fully twice as many girls as boys.

Current modes of diet, designed to produce the fashionable narrow gauge form, is doubtless an important factor in causing tuberculosis among the young ladies of high school age.—Illinois Health Messenger.



MISSOURI WATER AND SEWERAGE CONFERENCE

WHAT ABOUT YOUR DRINKING WATER?

It is very gratifying to the State Board of Health to note the growing interest in the production of safe public water supplies by those responsible throughout the state. It would hardly be possible to enumerate all of the improvements to these supplies that have been secured in the past few years, but it is safe to say that the number would be several hundred.

In the list of improvements, a prominent place may be given to such items as modernizing old plants, covering and leak-proofing storage reservoirs, securing better sources of supply, replacing old equipment, purchasing additional equipment, providing laboratory facilities and numerous other changes which tend to build up and place in a safer condition the supply of water for human consumption.

Not only has improvement been made by securing more and better equipment, but also by a marked advancement in the skill and knowledge of the superintendent and operator. These changes have not come about suddenly, but are gradually being manifest, and we hope they will continue with increasing rapidity.

Whenever the personal equation enters into such important matters as water supply, there will always be need for eternal vigilance. This is particularly true when water purification is involved, demanding certain standards of purity to safeguard the health and lives of many people. No single factor in all the intricacies of modern civilization embodies the potential danger to so many persons as a water purification plant that is poorly equipped or operated in a careless, ignorant manner. Consequently, constant improvement, and regular supervision of the purification processes and personnel in responsible charge, is an unending task which has for its reward the good health and welfare of the community.

No superintendent should become complacent or satisfied with the purification plant and its operation; there are always many details in every plant that could be improved upon to the advantage of its products, and the possibilities for increasing and improving upon the technical knowledge of the personnel are limitless. Numerous organizations have repeatedly published, and are regularly publishing, essential information on water purification, which is available in an economical and practical form for every superintendent. However, neither the State Board of Health nor any other organization is able to operate your plant. Supervision, instruction, and advice are available, but the actual job, 365 days in the year, depends upon the efforts and industry of the superintendent.

Last month, the State Board of Health issued the 1929 report on public water supplies in Missouri in which 59 supplies were conditionally approved and 25 were not approved. It is almost inconceivable that the superintendents and city officials of these cities would allow such conditions to exist, particularly since their attention has been repeatedly called to defects responsible for lack of approval. With few exceptions, the cost of correcting these defects is ridiculously small and, lamentable as it may seem, in too many cases nothing but poor operation is to blame.

The work of the State Board of Health indicates its vital concern for the quality of water supplies available to the public in this state. What is your concern in this matter?

MISSOURI WATER AND SEWERAGE CONFERENCE NOTES

Plans and specifications were approved for the construction of a public water supply at Warsaw from a deep-well source. The original plans provided for a purification plant to treat the Osage River water; however, this source of water supply proved too expensive in construction.

Final inspection and approval by the State Board of Health has been made of the new sewage treatment plant for Eldon, Missouri. This plant consists of a coarse bar screen, Imhoff tank, sludge drying beds, dosing chamber and sprinkling filter.

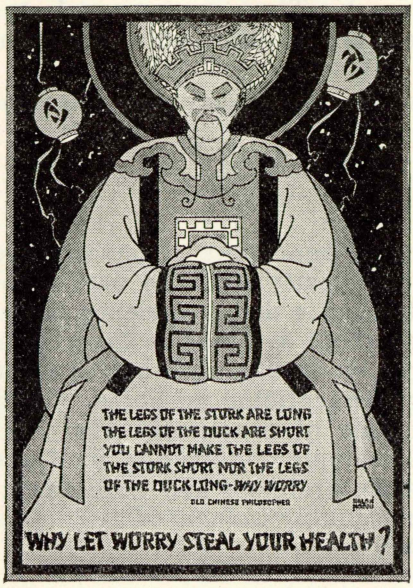
The printer's proof of the proceedings of the last meeting of the Missouri Water and Sewerage Conference has been returned and the finished report will be in your hands soon.

PREVENTION OF DISEASE

Practically the entire health program is one of urging the public to sneak up on its troubles when they—the troubles—are asleep. Medical science has reached such a stage of development that it can prophesy with a great deal of accuracy where the trouble is liable to break out. If you have a shallow well with a loose board covering; if you have a ramshackle old privy open to flies and chickens and pigs; if you are careless about the milk; if the flies swarm about your place it doesn't take a prophet inspired of Heaven to predict that some of these days you are going to have a visitor in the form of a typhoid or dysentery germ. Of course, you haven't time to fix them up just now, but you'll take time to have the fever when the germ moves in.—Thurman B. Rice, M. D.

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman, Mental Hygiene, Missouri Association of Parents and Teachers.



NO SHORT CUTS TO MENTAL HEALTH*

"To boil down the essence of mental hygiene into a predigested tabloid of rules and precepts is a demand that is being increasingly vocalized. What many persons want, apparently, is a compact, neatly packaged set of instructions, which, after enthusiastic administration in any given case can be relied upon to produce a calculated behavior response.

"Happily for mankind there is no prospect of doing this. Happily, because to do so would imply a standardizing and stabilizing of humane behavior that would rob life of most of its richness and variety. Happily, because such a process of mechanization would turn men into Robots, and happily, also, because success would remove stimuli to progress and cause the race to stagnate.

"No, it is not likely that regulation of behavior can be secured by handing out a set of 'rules.' As a matter of fact, few 'rules' of mental hygiene as yet exist. Attempts in the past to place such 'rules' in the hands of school children, adolescents or

adults have invariably degenerated into the quotation of time-worn platitudes, as sterile as they are absurd. 'Cheer up,' 'Think pleasant thoughts,' 'Don't worry' and a host of similar admonitions in the hearty voice of the professional Pollyanna are merely depressing to some people in need of mental hygiene, but irritating to others.

"Platitudes are not mental hygiene. Exhortations do not relieve maladjustment. There are no royal roads to learning in this matter. There are no short cuts to mental health."

*Mental Hygiene Bulletin of the National Committee for Mental Hygiene.

"One of the most important lessons that we should appreciate is the great complexity and the vast scope of the field of public health. It is not a definite science but comprises a great body of knowledge about as broad as experimental science itself. For that reason the study of public health should be excellently adapted for general educational purposes. In this field, not only are the fundamentals of practically every laboratory science applied, but here is ample opportunity for the study of classics, the humanities, social problems and economics; for all civilizations have been profoundly influenced by problems of health and disease.—D. J. Davis.

PROLONGING LIFE

It is a pity that so many people are constantly awaiting some startling, brilliant medical discovery, some elixir of life, when the following means for prolonging life by a considerable span are so close at hand:

Prenatal care to insure the birth of healthy children and to safeguard maternal lives.

Breast feeding of babies.

Immunization against smallpox and diphtheria.

Scrupulous cleanliness, both of person and environment.

Caution to avoid accidents.

Rational living, that is, work, recreation, and rest in proper proportion, together with good food, fresh air, and sunshine.

Periodic health examinations and observance of the doctor's advice.

Avoidance of self-medication and quackery.—New York City Bulletin.

MONTHLY PROGRESS REPORT—STANDARD MILK ORDINANCE CITIES

The table below indicates the ratings made by the State Board of Health on Standard Milk Ordinance cities during April. For the purpose of comparison, the previous milk ratings of the cities are also shown:

City.		Date.	Retail Raw Milk.	Raw Milk To Plant.	Pasteurized Milk.	Enforcement.
Carrollton	Previous Rating	2–12–30	90	.....	.....	97
	Last Rating	4– 3–30	79*	.....	.....	97
Monett	Previous Rating	2– 5–30	78	.....	.....	None estimated.
	Last Rating	4–15–30	78	.....	.....	99
Neosho	Previous Rating	11–19–29	48	58	29	None estimated.
	Last Rating	4– 8–30	76	None selling.	None selling.	98

*This reduction in rating is due entirely to the fact that in the previous rating credit was given by the U. S. Public Health Service for bacterial counts not made. The highest rating possible, when no bacterial counts are made, is 85.

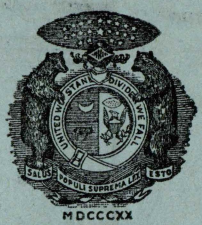
COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF MARCH, 1929 AND 1930

Disease	1929	1930
Chickenpox	426	548
Diphtheria	316	239
Epidemic Sore Throat	22	62
Influenza	357	145
Malaria	24	15
Measles	2327	727
Meningitis	151	99
Mumps	293	256
Ophthalmia	4	7
Pellagra	2	0
Pneumonia	158	119
Poliomyelitis	3	5
Rabies in animals	12	14
Scarlet Fever	574	645
Smallpox	229	448
Trachoma	5	32
Tuberculosis	307	269
Typhoid Fever	23	19
Whooping Cough	401	219
Undulant Fever	0	6

MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II JUNE, 1930 NO. 10



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JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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MISSOURI PUBLIC HEALTH NEWS

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Vol. II JUNE, 1930 No. 10

GUARD AGAINST VACATION TYPHOID
BE IMMUNIZED

VACATIONS

Attractive folders describing bungalow camps, radium springs, the land of lakes and other summer resorts figure in many family councils at this time of year and arguments wax hot regarding the selection of a spot in which to escape the humdrum of every-day life for a few glorious weeks. A holiday spent at a hotel does not appeal to a traveling salesman, but is the ideal of many a housewife and, since the purpose of a vacation is to obtain a complete change of physical and mental environment, the choice of a location should be left to one's desires and inclinations as much as funds and circumstances will permit.

The vacations of city dwellers frequently take the form of a pilgrimage back to nature, but the nature that they go back to is not the nature they knew in childhood. Time was when one could stretch himself upon the turf at the side of any brook or spring and quench his thirst without thought of the consequences. The springs and brooks are still there and they may look the same as of yore, but let the user beware, they are not the same, for man has soiled his vacation camp sites the country over. Unless one has had his typhoid immunization within the past three years, he is very apt to return to his home from a two weeks' vacation just in time to start playing host to a lot of rural typhoid germs who have returned with him for a six weeks' visit to the city.

Typhoid fever has become a rural disease because the cities look after the welfare of their residents by supplying pure drinking water, supervising the people who handle foods and taking care that dairies supply safe milk. Last year almost three times as many Missourians died of typhoid fever in communities with a population of two hundred or less as succumbed to the disease in cities of a population of 75,000 or over.

In this age of rapid and easy transportation when intestinal infections have been carried to the most isolated little communities where they thrive because of unsanitary conditions, typhoid immunization is as necessary to a successful back to nature vacation as old clothes.—R. L. L.

In planning your vacation, don't forget that it is more rest and not more excitement that most people need. Make your vacation one of rest and relaxation.

The cleanliness of human hands can never be guaranteed, because their many functions subject them to an endless chain of infection. Yet the average person uses them as if they were fitted with sterile gloves.—Milwaukee Health Bulletin.

Some of the hale and hearty old-timers want to know why it takes such an endless amount of hygiene, propyplaxis, sanitation, dietary regulation, medical examination and what not to raise healthy children now-a-days when they used to just grow up that way. The health officer answers that it may be a consumate mystery but people used to raise apples without spraying, pigs without inoculation against cholera, cotton without fighting the boll weevil, cattle without precaution against tuberculosis and—anyway in some quarters there are now some sorry lots of left-overs from the good old system of raising people. So recently as the World War, Uncle Sam had a hard time finding 6,000,000 able-bodied men and reports have it that quite an annual expense as developed because many of those chosen couldn't stand the pace of military life.—Illinois Health Messenger.

Recognition of the importance of public health to the welfare of the State and the Nation by all thinking people and the law-making bodies who represent their interests, is increasing very rapidly. This is an extremely fortunate state of affairs.—Matthias J. N icoll.

THAT SUMMER RESORT YOU CHOOSE

Is it kept in a clean, sanitary condition at all times?

Does it have good natural drainage?

Does it have a safe water supply, approved by the State Board of Health?

Does it have adequate, fly-proof toilet facilities?

Is the food which is offered for sale protected from flies and other insects?

Is the garbage stored in metal, fly-tight cans and removed daily?

Are the lavatories and baths clean and are they provided with individual towels and soap?

INVESTIGATE!

The above are the requirements for a safe summer resort. They are not fads or fancies but matters of common decency and are necessary for your health, safety and comfort. A resort that neglects any one of these health safeguards is not a safe place for you to spend your vacation, and only those which meet these requirements receive a Permit to Operate from the State Board of Health of Missouri.

LEARN TO SWIM FOR HEALTH AND SAFETY

The pup went on his first fishing trip the other day. Now the pup is almost a year old and is quite a sophisticated city dog. He knows all about riding in automobiles and how to take care of himself about town and utterly disdains dog catchers. He is strictly up-to-date in regard to disease prevention, too, as he was immunized against rabies at the same time that the baby got her diphtheria toxin-antitoxin. This fishing trip, however, showed that his education had been sadly neglected in at least one particular. The pup had never encountered a body of water more than five or six inches deep, so he calmly walked off the river bank into water that was six feet deep and disappeared from view, "kerplunk!" To the great relief of the boy who was also being initiated into the mysteries of Isaac Walton, the pup soon reappeared, swam to the bank and beat a hasty retreat to the car where he stayed in spite of all attempts to coax him back to the river, saying by both looks and actions that he was off of rivers for life. Like the pup, most animals swim instinctively when they find themselves in the water, but picture the plight of a poor human being in the same sort of a predicament. Unless there happened to be some swimmer nearby to drag him out, there would probably be another death

report filed with the Department of Vital Statistics and there were 179 such reports filed in Missouri last year.

Health authorities advise one hour's exercise in the open air each day as a part of the individual's program of keeping fit and swimming is not only a pleasant, but also a desirable type of exercise. It brings the majority of the muscles of the body into play and develops grace and litheness. These two latter attributes are not to be ignored for we have all known people who were living examples of the old comic movie title, "An Accident Going Somewhere to Happen." Such people lack the grace and agility required to keep out of danger.

Educators consider the art of swimming of enough importance that many colleges and universities require their students to demonstrate their ability to swim before they are allowed to graduate. The person who learns to swim and uses that ability as one form of exercise will be able to take care of himself if he is ever suddenly thrown into deep water and he will be able to assist any unfortunate who cannot swim and who gets in over his depth.

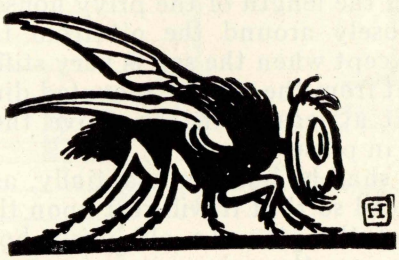
Every swimmer should also be familiar with the Prone Pressure Method of artificial respiration. This first aid measure should be employed on every person who is taken from the water in an unconscious condition until the doctor comes. If you are not familiar with the Prone Pressure Method of artificial respiration, write to your State Board of Health, the National Safety Council, or the American Red Cross for instructions. It has saved many lives.—R. L. L.

SANITARY SAMBO SAYS:

FLIES

Come to your house straight from the manure pile, the privy or the garbage pile, covered with germs. They walk on your bread, wash their dirty feet in the baby's milk and wipe them in the sugar bowl. This pollutes the food with filth and often makes people sick.

Be Decent.
Don't Blame the Heat.
Clean Up — Screen Up.
Give Your Family A Fair Chance.



"The severity of an outbreak of a communicable disease will be determined by the relative susceptibility of the individuals making up a population, the type of virulence and degree of virulence of the microbe, the degree of the exposure and the health and living conditions of the people."—William H. Park.

PLANS AND SPECIFICATIONS FOR APPROVED SANITARY PIT PRIVY

General—A sanitary pit privy consists of a privy house built over a pit in such manner as to exclude all flies from access to the excreta and so as to divert rain and surface water away from the pit. The essential requirements are a fly-tight seat box or riser, close fitting seat covers and the banking up of the excavated earth around the house.

Location—A pit privy shall be located at a distance of not less than 50 to 100 feet from a well, spring or cistern and so placed that the surface and underground drainage will be away from the well, spring or cistern.

A pit privy shall never be placed where a limestone ledge, slate or other formation with cracks or crevices lie closer than 10 feet below the ground surface.

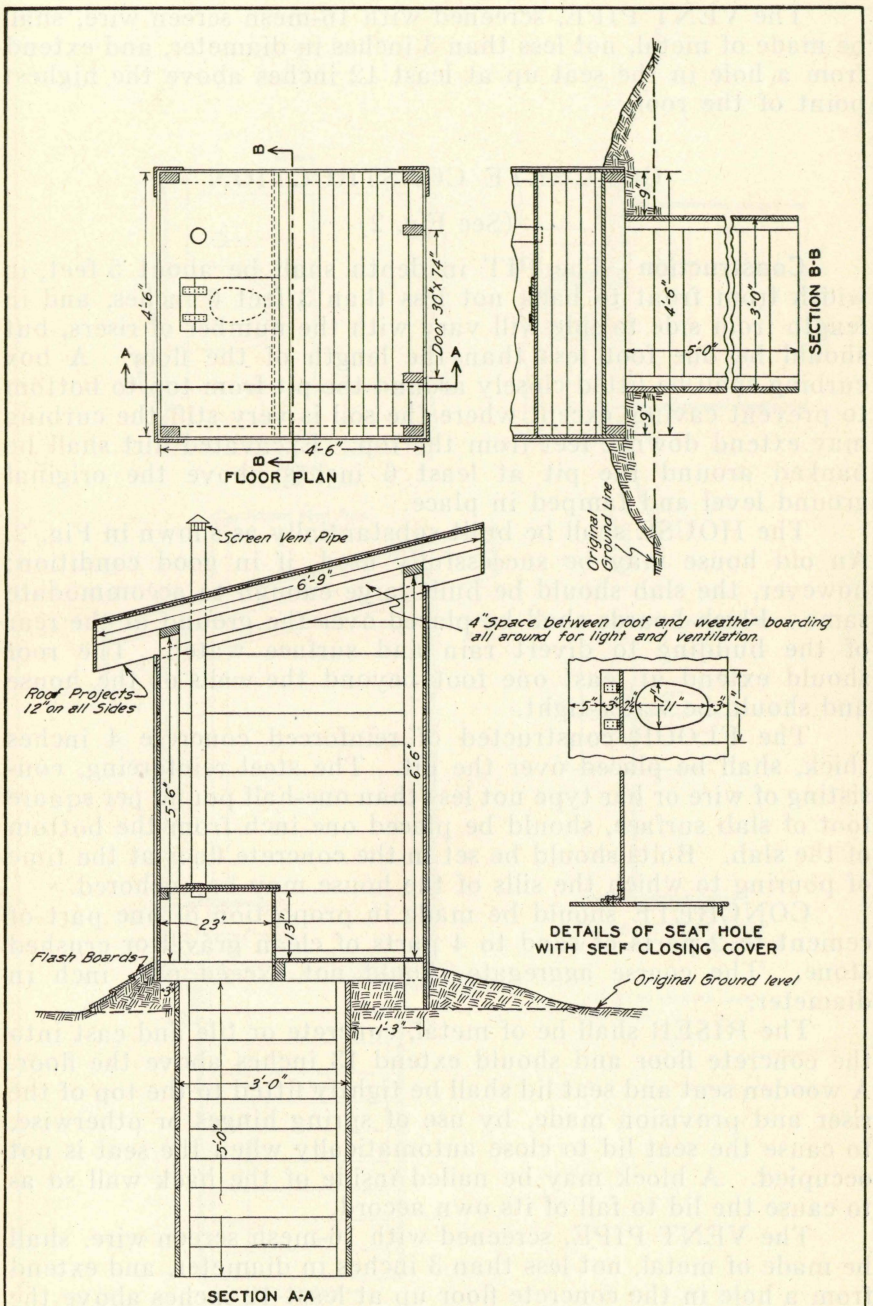
On low marshy ground subject to flooding at periods, the earth pit shall be replaced by a concrete vault with sides extending above high water level.

WOOD CONSTRUCTION

(See Fig. 1)

Construction—The PIT in depth shall be above 5 feet, in width from front to back about 3 feet, and in length from side to side will vary with the number of seat holes but should be 18 inches less than the length of the privy house. A box curbing shall be fitted closely around the pit from top to bottom to prevent caving, except when the soil is very stiff the curbing may extend down 2 feet from the top. Excavated dirt shall be banked up around the pit at least 6 inches above the original ground level and tamped in place.

The HOUSE shall be built substantially, as shown in Fig. 1, and should be placed so that it will rest upon the dirt banked up around all sides of the pit. An old privy house often can be remodeled for use over the privy pit, using new floors, seat and back wall, thus saving the cost of an entirely new structure. Flash boards shall be placed over ground at rear of building to divert rain and surface water. The roof should extend at least one foot beyond the walls of the house and should be water-tight. The floor and the entire seat box must be of tongue and grooved stock or otherwise made absolutely fly-tight. The seat box should be 13 inches high and 2 feet wide from front to back. The seat cover (lid) should overlap all sides of the hole at least 3 inches, and provision made by use of spring hinges or otherwise to cause the seat lid to close automatically when the seat is not occupied. A block may be nailed inside of the back wall so as to cause the lid to fall of its own accord.



SANITARY PIT PRIVY

WOOD CONSTRUCTION

FIG. 1

The VENT PIPE, screened with 16-mesh screen wire, shall be made of metal, not less than 3 inches in diameter, and extend from a hole in the seat up at least 12 inches above the highest point of the roof.

CONCRETE CONSTRUCTION

(See Fig. 2)

Construction—The PIT in depth shall be about 5 feet, in width from front to back not less than 3 feet 6 inches, and in length from side to side will vary with the number of risers, but should be one foot less than the length of the floor. A box curbing shall be fitted closely around the pit from top to bottom to prevent caving, except where the soil is very stiff the curbing may extend down 2 feet from the top. Excavated dirt shall be banked around the pit at least 6 inches above the original ground level and tamped in place.

The HOUSE shall be built substantially as shown in Fig. 2. An old house may be successfully used, if in good condition; however, the slab should be built large enough to accommodate same. Flash boards shall be placed over the ground at the rear of the building to divert rain and surface water. The roof should extend at least one foot beyond the walls of the house and should be water-tight.

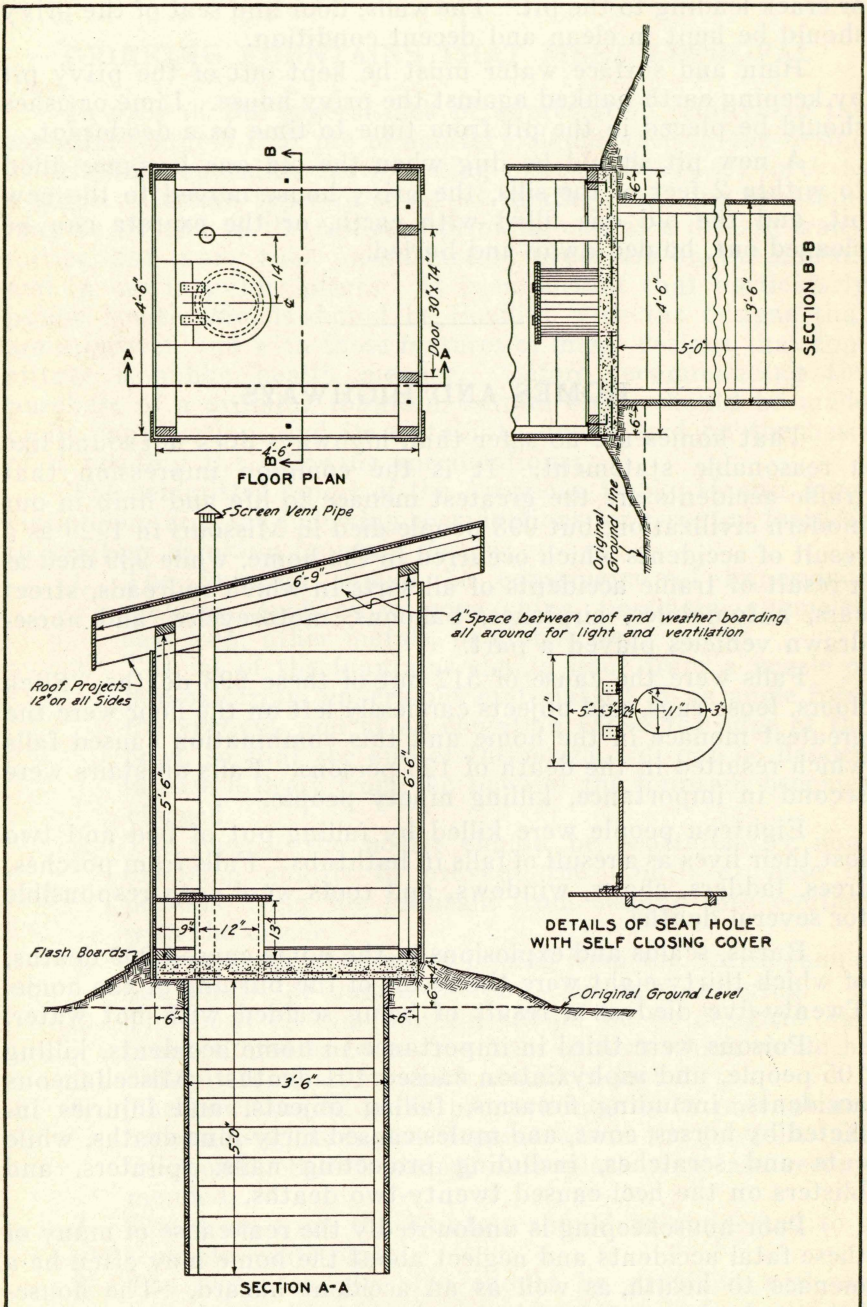
The FLOOR constructed of reinforced concrete 4 inches thick, shall be placed over the pit. The steel reinforcing, consisting of wire or bar type not less than one-half pound per square foot of slab surface, should be placed one inch from the bottom of the slab. Bolts should be set in the concrete floor at the time of pouring to which the sills of the house may be anchored.

CONCRETE should be made in proportion of one part of cement to 2 parts of sand to 4 parts of clean gravel or crushed stone. The coarse aggregate should not exceed one inch in diameter.

The RISER shall be of metal, concrete or tile and cast into the concrete floor and should extend 13 inches above the floor. A wooden seat and seat lid shall be tightly fitted to the top of the riser and provision made, by use of spring hinges or otherwise, to cause the seat lid to close automatically when the seat is not occupied. A block may be nailed inside of the back wall so as to cause the lid to fall of its own accord.

The VENT PIPE, screened with 16-mesh screen wire, shall be made of metal, not less than 3 inches in diameter, and extend from a hole in the concrete floor up at least 12 inches above the highest point of the roof.

Care and Maintenance—The Sanitary Pit Privy must be kept fly-tight by keeping the seat covers closed at all times when seat is unoccupied, hinges in good condition, by replacing screen wire whenever it rusts, and by repairing immediately any opening



SANITARY PIT PRIVY

CONCRETE CONSTRUCTION

FIG. 2

or crack leading to the pit. The walls, floor and seat of the privy should be kept in clean and decent condition.

Rain and surface water must be kept out of the privy pit by keeping earth banked against the privy house. Lime or ashes should be placed in the pit from time to time as a deodorant.

A new pit should be dug when the old one becomes filled to within 2 feet of the sills, the privy house moved to the new pit, and the old one filled with earth, or the excreta can be cleaned out, hauled away and buried.

HOMES AND HIGHWAYS.

That homes are no safer than highways does not sound like a reasonable statement. It is the common impression that traffic accidents are the greatest menace to life and limb in our modern civilization, but 998 people died in Missouri in 1929 as a result of accidents which occurred in the home, while 939 died as a result of traffic accidents of all sorts in which railroads, street cars, automobiles, airplanes, balloons, motorcycles, and horse-drawn vehicles played a part.

Falls were the cause of 512 out of these 998 deaths. Slick floors, loose rugs, and objects carelessly left on the floor were the greatest menace in the home and this combination caused falls which resulted in the death of 123 persons. Falls on stairs were second in importance, killing ninety people.

Eighteen people were killed by falling out of bed and two lost their lives as a result of falls in bathtubs. Falls from porches, trees, ladders, chairs, windows, and roofs were each responsible for several deaths.

Burns, scalds and explosions in the home caused 209 deaths, of which thirty-eight were the result of the burning of the home. Twenty-five died as a result of being scalded with hot water.

Poisons were third in importance in home accidents, killing 105 people, and asphyxiation caused 101 deaths. Miscellaneous accidents, including firearms, falling objects, and injuries inflicted by horses, cows, and mules caused forty-nine deaths, while cuts and scratches, including projecting nails, splinters, and blisters on the heel caused twenty-two deaths.

Poor housekeeping is undoubtedly the real cause of many of these fatal accidents and neglect about the home may often be a menace to health, as well as an accident hazard. The housekeeper who leaves things laying around promiscuously on floors and stairs, where they may result in falls, usually spends more time in doing her work than would be required in keeping things neat and orderly; and these figures show that she is just as much of a menace as the drunken or reckless driver.—R. L. L.

DRINKING FOUNTAINS THAT MEET APPROVAL

In view of the general lack of appreciation relative to the essential features that are of sanitary significance in the design of drinking fountains, the following information is set forth as a guide. Certain types of so-called sanitary drinking fountains may be likened to the common drinking cup as a disease transmitter, and many such unsatisfactory types are on the market and in use in public places. It is important that particularly public health officials should be familiar with the designs that are approved and with those features of many designs that constitute a public health meance. Before recommending the purchase of a drinking fountain, careful study should be made of its construction, and its suitability determined on the basis of it meeting the following specifications:

The committee report of the American Public Health Association contains the following specifications for essential features in sanitary drinking fountain design:

1. The fountain should be constructed of impervious material, such as vitreous china, porcelain, enameled cast iron, other metals, or stoneware.
2. The jet of the fountains should issue from a nozzle of non-oxidizing, impervious material set at an angle from the vertical, and at an elevation above the edge of the bowl, so that the end of the nozzle will not be flooded in case a drain from the bowl of the fountain becomes clogged.
3. The end of the nozzle should be protected by non-oxidizing guards to prevent the mouth or nose of persons using the fountain from coming into contact with the nozzle.
4. The inclined jet of water issuing from the nozzle should not touch the guard, thereby causing splattering.
5. The bowl of the fountain should be so designed and proportioned as to be free from corners which would be difficult to clean or which would collect dirt.
6. The bowl should be so proportioned as to prevent unnecessary splashing at a point where the jet falls into the bowl. Self-cleansing, anti-splash rims are recommended.
7. The drain from the fountain should be connected to a separate waste pipe.
8. The water supply pipe should be provided with an adjustable valve fitted with a loose key or an automatic valve permitting the regulation of the rate of flow of water to the fountain so that the valve manipulated by the users of the fountain will merely turn the water on or off.

9. The control valve should be operated preferably by knee or foot action to avoid possible hand contamination.
10. The height of the fountain at the drinking level should be such as to be most convenient to persons utilizing the fountain. The provision of several step-like elevations to the floor at fountains will permit children of various ages utilizing the fountain. Elevations may be difficult to provide, however, at fountains recessed in walls.
11. The rate of flow and the pressure should be such that the water will not splash over the bowl. It should be at a rate not less than one-half gallon per minute and at nozzle pressure not exceeding five pounds per square inch.
12. The waste opening and pipe should be of sufficient size to carry off the water promptly. The opening should be provided with a strainer.

The committee report of the American Water Works Association contains the following specifications for the essential features in sanitary drinking fountain design:

1. All types of drinking fountains with vertical jet are to be condemned.
2. Most types of drinking fountains with slanting jets are to be condemned.
3. To be sanitary, drinking fountains should conform to the following specifications:
   (a) The jets shall be slanting.
   (b) The oriffices of the jets shall be protected in such a manner that they cannot be touched by fingers or lips, or be contaminated by droppings from the mouth, or by splashings from basins beneath the orifices.
   (c) The guards of the orifices shall be so made that infectious material from the mouth cannot be deposited upon them.
   (d) All fountains shall be so designed that their proper use is self-evident.

People have been informed that by suitable preventive measures, epidemics can be avoided and thousands of dollars saved. They know that smallpox, typhoid fever, diphtheria, hookworm, and malaria, if not prevented, lower the morale of the community, reduce personal efficiency, reduce community prosperity, and that they affect the business man as well as the farmer.—Florida Health Notes.

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman Mental Hygiene, Missouri Association of Parents and Teachers

EATING HABITS

"Good eating habits are necessary for health and happiness. Eating habits are formed at home and in early childhood. The person who fusses about food is likely to fuss about other things, and one who fusses all the time is not liked.

"Things to Do—

Let the child see that *you* eat, what is put before *you.*

Have meals at regular time. Make them pleasant parts of the daily program and nothing more.

Make food attractive and serve only a little at a time.

Expect the child to eat it.

Give him thirty minutes for his meal. If it is not eaten then, take it away.

Have him understand that eating is his business.

Try new foods, a little at a time, and try them more than once.

"Things to Avoid—

Don't give him anything between meals.
Don't talk of his likes and his dislikes before him.
Don't allow others to talk of their likes and dislikes.
Don't talk about the child's poor appetite.
Don't compare his appetite with other children's.
Don't let him see that you worry about his eating.
Don't feed the child when he is old enough to feed himself.
Don't coax or threaten, or force him to eat.

"Remember—

It does not hurt a well child to miss a meal. Food fussiness is never inherited but is often imitated. The child's likes and dislikes depend upon you. Teach him to like the foods that are good for him."

—Habit Training for Children.

Physical health is the surest foundation of mental and moral health. An eminent authority on psychology, and modern writer said: "The prevailing state of mind and character of thought shapes the body and molds the features." It makes us ugly or pleasing, attractive or repulsive to others. Our thought shapes our gestures, our manners, our walk.—Dr. A. J. Hostetter.

MISSOURI WATER AND SEWERAGE CONFERENCE

SEWAGE TREATMENT PLANT OPERATION

It is a well recognized fact that the operation of water treatment plants is improved when simple control tests are made at the plant. Although it is equally true that the sewage treatment plants will produce much better results when the operators are guided by the results of tests, yet, in most cases, those in charge of these plants have been slow to inaugurate any form of laboratory control. Since more and more cities are being made defendants in law suits, by landowners, for damages done to receiving streams by the effluent from sewage treatment plants, laboratory equipment which enables a plant to be operated more satisfactorily is an excellent investment and safeguard.

Frequently cities experience considerable difficulty when the effluent from the sewage treatment plant is discharged into a comparatively small stream. It quite often happens that the sewage depletes the oxygen content of the stream sufficiently to create an odor nuisance downstream from the plant. One of the tests recommended is the methylene blue test for relative stability which indicates the suitability of the effluent for discharge into a watercourse. If the results of the test show that the discharge from the plant is not sufficiently stabilized for entrance into a stream, those in charge of the plant have advance warning that some steps must be taken to improve the operation of the plant in order to avoid trouble. If the test shows that the plant is functioning satisfactorily, a record of the tests is of inestimable value in event of a law suit for damages, which are alleged to have been done to the receiving stream.

Another test which is recommended is the determination of hydrogen ion concentration. This test enables the operator to determine the condition of the sludge and whether it is digesting satisfactorily. From this test, warning is given of conditions which are apt to cause "foaming" and since "foaming" is quite frequent, especially in Imhoff tanks, it is very valuable to those in charge of the plant to be able to anticipate this action and to have a test which will allow them to properly correct the condition which is responsible. The other test which is recommended is the test for settleable solids which indicates the efficiency of the plant in removing solids from the sewage.

The technique of these tests is surprisingly simple and can be acquired in a short time by any intelligent operator. The State Board of Health has prepared a list of the necessary equipment for making the tests, which will be furnished to any city upon request. The estimated cost of this equipment is approxi-

mately $60.00, and this is an investment which will yield returns to any city making it. Detailed instructions for making the tests and record sheets for recording the results will be furnished by the State Board of Health. In addition, technical assistance will be provided to instruct operators in making these simple tests and keeping records of the results.—H. M. B.

MISSOURI WATER AND SEWERAGE CONFERENCE NOTES

A final inspection of the new sewerage system at Owensville was made recently by engineers of the State Board of Health. The trunk lines and the sewage treatment plant were financed by a bond issue and the laterals were constructed on the district plan, the funds for these laterals being secured from tax bills assessed against the property served. This method of constructing sewers can be used advantageously by many municipalities, especially when the bond issue, which the city can legally vote, is not sufficient to construct a complete sewerage system.

Copies of the Fifth Annual Report of the Missouri Water and Sewerage Conference have been mailed to the members of the conference. The report this year is printed instead of being mimeographed as it was in the past. Any member of the conference who has not secured his copy should advise the secretary, Mr. H. D. Peters, Assistant Public Health Engineer, State Board of Health, Jefferson City, Missouri. In this connection, we wish to call attention to the list of commercial firms supporting this issue by purchasing advertising, and to mention the U. S. Wind Engine and Pump Company of Kansas City, Missouri, which through an error was omitted from this list.

Excelsior Springs has reported passage of the Standard Milk Ordinance. This is the twenty-sixth Missouri city which has adopted the standard ordinance as a method of control of its municipal milk supply.

Pilgrimages, crusades and crowds have ever supplied the tinder and furnished the match which have startled devastating epidemics. Likewise, cities through which have passed streams of humanity and commerce have had to pay for their strategic location, prosperity and culture in greater liability to disease and in increased precaution to protect themselves against pestilences from without and their visitors and neighbors from acquiring plagues endemic within.—Illinois Health Quarterly.

MONTHLY PROGRESS REPORT—STANDARD MILK ORDINANCE—CITIES

The table below indicates the ratings made by the State Board of Health on Standard Milk Ordinance cities during May. For the purpose of comparison, the previous milk ratings of the cities are also shown:

City.		Date.	Retail Raw Milk.	Raw Milk To Plant.	Pasteurized Milk.	Enforcement.
Brookfield**	Previous Rating	7-26-29	66	77	69	92
	Last Rating	5- 1-30	76	78	70	74*
Trenton**	Previous Rating	8-13-29	60	36	29	None made
	Last Rating	5- 5-30	79	69	80	78*
Neosho**	Previous Rating	4- 8-30	76	None sold	None sold	98
	Last Rating	5-21-30	76	None sold	None sold	77*
Monett**	Previous Rating	4-15-30	78	None sold	None sold	99
	Last Rating	5-22-30	79	None sold	None sold	79*
Republic**	Previous Rating	12-26-29	38	None sold	None sold	None made
	Last Rating	5-24-30	78	None sold	None sold	79
Ash Grove**	Previous Rating	3-13-30	78	None sold	None sold	93
	Last Rating	5-23-30	79	None sold	None sold	79*

*This reduction in rating is due entirely to the fact that in the previous rating credit was given for bacterial counts not made. The highest rating possible, when no bacterial counts are made, is 85 for milk and 80 for enforcement.

**Junior Ordinance cities.

OF PUBLIC HEALTH INTEREST

Dr. C. P. Coogle of the U. S. Public Health Service addressed the full-time health officers of Southeast Missouri and several members of the staff of the State Board of Health on the subject of malaria control at Cape Girardeau on May 5. More effective methods of diagnosis, estimation of the incidence of the disease, and means of securing co-operation of the practicing physicians with the health officer in the control of the disease were considered.

Dr. James Stewart appeared before the Federal Radio Commission at Washington, D. C., on May 20, in connection with the hearing in which Dr. Brinkley, of Milford, Kansas, was cited to show cause why his broadcasting license should not be revoked.

The following books have recently been added to the loan library of the State Board of Health:

Public Health Aspects of Dental Decay in Children, American Child Health Association.

The Nurse in Public Health, Beard, Mary, R. N.

Ultraviolet Light and Vitamin D in Nutrition, Blunt, Katharine, and Cowan, Ruth.

Scientific Basis for Health Instruction in Public Schools, Cairns, Laura.

Bacteriology for Nurses, Carey, Harry W., A. B., M. D.

Money Value of A Man, Dublin, Louis I., Ph. D., and Lotka, Alfred J., D. Sc.

Who's Who Among the Microbes, Park, William H., M. D., and Williams, Anna W., M. D.

Community Hygiene, Smiley, Dean Franklin, A. B., M. D., and Gould, Adrian Gordon, M. D.

Synopsis of the Practice of Preventive Medicine, Warren.

Most people are not interested in health until they are sick. Then they are willing to pay any price to recover lost health. The better way is to safeguard health, so as to avoid sickness. If every parent were to obtain the benefits of modern health procedures for their children, many communicable diseases could be reduced to almost the vanishing point. It is a fact that scientific methods for maintaining health are available in greater number today than ever before in the history of preventive medicine. Whether they shall be employed or not depends upon the readiness with which the general public makes use of them.—Col. Health Bulletin.

Health education activities should tend to make children interested in the welfare of their friends and neighbors in the community rather than to leave them concerned solely with their own comfort. This is essential, not only for social and moral reasons, but for the mental health of the child. Teaching which encourages him in introspection and constant examination of his own feelings usually result in nervous, morbid emotional states.

Emphasis on community welfare, discussion of health in positive terms of abounding vigor and strength, and measurement of health by concrete means such as weight, are safeguards against morbid habits of introspection.—Hygeia.

The best cure for typhoid fever is not to have it. Taking the little trouble to Pasteurize the milk may save the big trouble of being the center piece in the floral display at the undertaking parlors. A typhoid bug don't amount to much by himself but you just let him raise a family in your insides and then see what he amounts to.—Thurman B. Rice, M. D.

"Poor Posture" is a sign that the child needs a careful and complete medical examination to discover the underlying cause of poor posture. The "poor posture," like toothache, is really nature's warning that something is wrong and the child needs the physician's help to discover what that "something" is and to tell him how to correct it. When *the cause* is removed or corrected, the poor posture usually disappears. Treat the *child*, not the posture.

Some of the grotesque attitudes in which children sit or lie, have a real purpose back of them, for they relax the child's tired muscles and let him "rest-up" most quickly.—Dr. LeRoy A. Wilkes.

The first symptom of rabies in dogs is a change in disposition. Dogs which are normally good natured become savage, and dogs which are normally savage generally become strangely docile. There is a change in the tone of the animal's voice. There follows a paralysis of the muscles of the throat which causes the animal to attempt to use the paralyzed muscles. This produces the tendency to bite, and it is during this stage that the disease is most readily transmitted. In the final stage of rabies, there is a complete paralysis of the hind legs, the animal being unable to run without falling.—California Health Bulletin.

The prevention of blindness in babies has well been cited as an instance in which "the protection of the citizen from the assaults of ignorance, indifference, or neglect, when they threaten his well-being and even his economic efficiency, is a duty which the state can not evade and which he has a right to exact."—Cal. Bulletin.

COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF APRIL, 1929 AND 1930

Disease	1929	1930
Chickenpox	279	415
Diphtheria	149	138
Epidemic Sore Throat	14	20
Erysipelas	1	0
Influenza	29	66
Malaria	26	18
Measles	1408	756
Meningitis	96	69
Mumps	207	298
Ophthalmia	3	4
Pellagra	1	1
Pneumonia	59	97
Poliomyelitis	0	0
Rabies (in animals)	1	4
Scarlet Fever	395	653
Smallpox	164	436
Tetanus	1	1
Trachoma	25	31
Tuberculosis	226	230
Typhoid Fever	54	24
Whooping Cough	389	181
Tularaemia	0	0
Undulant Fever	0	10

MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II JULY, 1930 NO. 11

Published Monthly by

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JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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MISSOURI PUBLIC HEALTH NEWS

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Vol. II JULY, 1930 No. 11

MEN AND MOTORS

You know the model of your Car
You know just what its powers are.
You treat it with a deal of care
Nor tax it more than it will bear.
But as for self—that's different;
Your mechanism may be bent,
Your carburetor gone to grass,
Your engine just a rusty mass.

Your wheels may wobble and your cogs
Be handed over to the dogs.
And you skip and skid and slide
Without a thought of things inside.
What fools, indeed, we mortals are
To lavish care upon a Car
With ne'er a bit of time to see
About our own machinery!

—John Kendrick Bangs

The big expensive automobile will stand more abuse than the rickety "puddle-jumper" just as the rugged physique will run longer without overhauling than the weak, sickly specimen of humanity, but a periodic overhauling will keep both automobiles and human machines running long after indifference and neglect would have sent them to the junk pile.

"I've never been sick a day in my life and I never have had to see a doctor. I'm O. K." says a big, husky bruiser. A year or two later things go wrong and, much to his humiliation, he is forced to call a doctor. He has waited too long and his friends and neighbors are shocked by his sudden death and say that it is a pity that such a fine, "healthy" person should be snuffed out right in the prime of life. He felt the danger signals of trouble all right, but ignored them at the time when a physician could have corrected the difficulty before it became serious or have told him how to prevent its development.

The man who falls by the wayside is not the old man, but the worn-out man. He may not have worked any harder than the man who is twenty years his senior and who is still going strong because he looked ahead, checked up on himself regularly and made repairs along the way. The annual physical inventory is just as practical and important in the business of living as is the financial inventory in the business of making a living. Both are scientific appraisals of assets, methods, functions, and possible defects. An examination once a year shows up the minor de-

fects which may readily cause a great deal of trouble later on. A summing up of the information obtained suggests a working program fitted to the individual needs. When symptoms appear which demand immediate attention either in living or business, you have waited too long. Go to your doctor and see if there is anything that needs attention. A good rule is: Be examined on your birthday.—R.L.L.

NEW LAWS FOR DRIVERS OF HUMAN MOTORS

Pull your machine up alongside a filling station regularly three times a day and put in high-test fuel, such as leafy green vegetables, fresh fruit, milk, dark bread and real butter. Do not use substitutes—you wouldn't do it with a limousine. This high-test fuel is remarkable in that it builds your automobile as well as puts pep in your motor.

Run your human automobile into the garage each night for eight hours of rest. Remember to turn on the fan by opening windows and getting plenty of fresh air. This will prevent flat tires.

Run your automobile body onto the wash rack daily.

Keep the chewing apparatus clean. Brush it morning and night.

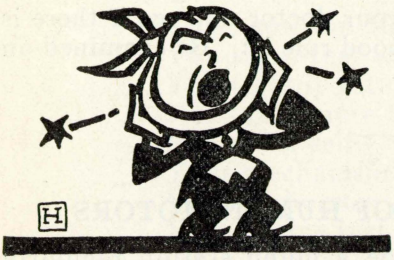
Give your human car plenty of water to prevent a dry radiator.

Visit expert mechanics regularly (the doctor once a year and the dentist at least twice a year). They can help you overhaul your machine and discover a little knock in the engine before you even hear it.

Put a self-starter on your flesh-and-blood vehicle—that is, remember the main facts about putting pep in your motor every day.—Illinois Medical Journal.

A modern railroad will not entrust its train to an engineer with thickened arteries, high blood-pressure, or heart or kidney disease, because experience has shown that these men can not be depended upon for prompt and accurate decisions in emergencies. Many beneficient, political, social, and industrial enterprises have been wrecked from the same causes. The time must come when it will be considered as important for the president of a railroad to have normal blood supply to heart and brain as in the case even of the engineer of the crack passenger express.—Dr. H. W. Cook.

TEETH AND HEALTH



"There is more physical degeneracy due to neglected teeth than to the abuse of alcohol," asserted Sir William Osler in pre-prohibition days. Yet you have never heard of the organization of a league, or the collection of funds to be used in interfering with the personal liberty of those misguided souls who choose to endanger their health and limit their usefulness by struggling through life with a mouth full of dirty and decayed teeth. Dr. Osler's statement was no idle remark, as the hospital records of one large medical school show that twelve per cent of the patients undergoing treatment during a two year period were admitted because of disabilities caused by infections of the mouth.

"Be true to your teeth or they will be false to you." Store teeth are one of the least objectionable manifestations of this infidelity. A decayed tooth is like a splinter in the finger. It may only cause local discomfort with the result that food is not properly masticated, and the individual has indigestion, or it may become infected and then, like the hollow tooth of the venomous snake, it pours poison into its victim which is carried to all parts of the body by the blood with unfortunate and sometimes disastrous results in the form of heart disease, ear and kidney infections, rheumatism and other troubles.

Nature's food chopper is a germ paradise. Look at some tartar from the teeth under the microscope, and you will be astonished at the number and variety of specimens included in the menagerie of the mouth. These germs need food, moisture and warmth, and when they find a neglected mouth they set up housekeeping and raise large families. They do not break down the enamel of the teeth themselves, but when food particles are allowed to remain in the crevices about the teeth, these bacteria ferment this material, and the acid that is formed in this process dissolves the enamel just as muriatic acid dissolves limestone or marble. After the enamel has been destroyed, the bacteria can then proceed with their work of producing decay in the inner layers of the teeth. "A clean, sound tooth never decays" is not fiction but fact.—R. L. L.

A man too busy to take care of his health is like a mechanic too busy to take care of his tools.—Cicero.

THE GORGAS MEMORIAL—ITS RELATION TO PERSONAL HEALTH AND THE PERIODIC HEALTH EXAMINATION

Dorothy S. Weiner, Soldan High School, St. Louis, Missouri

EDITOR'S NOTE: The Gorgas Memorial Institute of Tropical and Preventive Medicine is a tribute to the memory of the late Major General Wm. C. Gorgas, Surgeon General of the U. S. Army during the World War, whose brilliant work as Sanitary Officer of the Panama Canal Zone made possible the building of the Panama Canal. The annual essay contest conducted by the Institute is open to junior and senior high school students, and is an effort to reach the younger generation with proper and useful health information. This essay was selected by the judges as the best one submitted by a Missouri high school student. As winner of the State contest, Miss Weiner read this paper before the Sixth Annual Meeting of the Missouri Public Health Association at Jefferson City on April 23, 1930.

William Crawford Gorgas, scientist, physician, genius, has achieved for humanity the greatest deed man can accomplish, the saving of life. As the Great Healer of the Bible walked among the sick and deformed, working miraculous cures, so has Gorgas followed in His footsteps, and with steady perseverance, skill and sacrifice has ridden cities of infectious diseases. They will remain forever living monuments to his genius. The nations long dormant and neglectful of the living conditions and health of the masses were awakened by the touch of his magic wand and stirred to acclaim for this man who, with the genius's utilization of simple materials, had accomplished deeds which will go down in the annals of history among those of Lister and Edison. As a tribute to him and to his accomplishments, these nations have established a memorial institute of tropical and preventive medicine bearing his name to carry out the ideas which his fertile brain, working far ahead of his body, had planned.

On May 7, 1928, the bill authorizing the establishment of the Gorgas Memorial Laboratory in Panama, became an actuality when it was passed unanimously by the House of Representatives, the Senate, and received the approval of President Coolidge. Not only did the United States Government appropriate a sum to be given annually to the institute so that it could carry on its work, but the Latin-American Governments also vouch to contribute to the memorial which bears the name of the man who had saved their disease-infected cities and made of them veritable Paradises. The institute adopted as its aim an intensive drive against unnecessary illness and premature death.

As civilization has gradually progressed to a higher plane intellectually and materially it has brought with it, as the price of progress, new problems. The preservation of health is one of the most important of these problems and one which has been greatly neglected. The increase of sedentary occupations, the the difficulty of housing problems, the crowded conditions, and the faster rate of living have made it more and more difficult to main-

tain health among the people of the world. Because of the increase in illness and death, scientists and physicians have had to delve into the lores of medicine to discover ways of preventing disease. During the last fifty years, physicians and scientists have made discoveries in the field of preventive medicine which have saved millions of lives and billions of dollars for the world.

Among these discoveries is the demonstration of preventive inoculation by Pasteur of France which has saved thousands of lives, and the discovery of the diphtheria antitoxin by Von Behring of Germany which has reduced the diphtheria death rate eighty per cent. When a person is given preventive treatment against diphtheria, it is applied in the following manner: A Schick test is given to determine whether the person is susceptible to diphtheria. This test was devised by Schick of Vienna. If the person is susceptible, a series of toxin-antitoxin inoculations are given. After six months the patient is given another Schick test to determine whether the immunization is partial or complete. If it is not complete, one or two more inoculations are given, and six months later another Schick test is applied to see if complete immunity has been obtained. It is then impossible for the person to contract diphtheria.

In the case of both typhoid and scarlet fever it was found that their germs develop very rapidly in milk. Immediately after typhoid or scarlet fever is detected in any district, the milk supplies are examined, and inoculations given to all susceptible persons in the vicinity. Thus a spread of typhoid or scarlet fever can be checked almost at once.

The inoculation of cowpox vaccine into those susceptible to smallpox has succeeded in eradicating the disease almost entirely except for a few rare cases.

As a climax to all of this work came the accomplishment of Gorgas, whose application in Panama and Havana of Dr. Walter Reed's theory that the yellow fever germ was carried by the stegomyia mosquito, and his Herculean task in ridding these cities of them, proved to the world infallibly that cleanliness and preventive measures are the most positive eradicators of disease. Thus these great experimenters lit a flame of prevention to illuminate a path for the world to better health, and the nations, with the help of physicians and health institutions, have set their energies to keep it burning constantly.

The United States Federal Health Board has succeeded today, with the great help of institutions, such as the Gorgas Institute, the National Tuberculosis Association, the American Child Health Association, and many others, in educating the masses in health and hygiene to the point where almost every average person in the United States has acquired at least the elementary fundamentals of a health education.

The health education of school children is one of the most progressive movements. In special health classes given at

least once a week, the children are taught how to take care of their bodies and minds, and in about forty per cent of the American schools sex hygiene is taught. Children are taught that they must control their diet and that they must combine their food properly to receive the correct amount of nourishment needed for the proper functioning of the body. As the growth and development of the teeth are dependent upon the sort of food eaten, the pupils are explained the value of foods which contain the elements that build sound teeth. They are urged to prevent unnecessary decay and loss of teeth by brushing them at least twice daily, by exercising them in eating foods which are difficult to masticate and, as a final measure, by seeing the dentist regularly for examination. They are told that cleanliness aids considerably in warding off disease, that exercise will keep them fit by increasing blood circulation, building blood cells, and hardening muscles, and that the proper amount of sleep will act as a balance in giving their muscles rest and the body the opportunity to repair tissues and store up energy. These are only a few of the most important subjects taught in the health classes of the schools, but these seeds alone can produce the desired harvest of improved health among the masses. The instillation of this health knowledge in the mind of the child enables him to care for his own health, and he is also able to bring the information to the parents who in many cases do not know the proper hygienic methods of caring for a child.

Further steps have been taken to reach the parents by means of the radio, the movies, pamphlets and magazines, talks before parent-teachers associations and the newspapers. However, with this tremendous accomplishment, there comes one other great human endeavor that will undoubtedly safeguard the health of the people, and this is, the periodic health examination which will give each person the positive verification of his health.

The experiment with periodic health examinations was was tried by Gorgas during the World War when he occupied the position of Surgeon General of the United States Army. At the beginning of the war, he faced the exceedingly difficult task of selecting from millions of men of every rank, race, and condition, those physically capable of being soldiers. Out of the 4,500,000 men examined, more than one-half were found unfit, although outwardly they appeared to be in normal health. In his capacity as Surgeon General throughout the war, General Gorgas found it necessary to examine his men constantly to see that they were in perfect condition and, if not, to check disease in its early stages. By this constant inspection and prompt treatment he succeeded in maintaining a surprisingly low rate of sickness and death, and besides, his men, notwithstanding the hardships which they endured, were in a finer state of physical development than their colleagues who had remained at home.

Is it not naturally conclusive that if every person submitted to a periodic medical examination, his health would undoubtedly be more perfect, his susceptibility to disease greatly lessened, and his life infinitely lengthened? The promulgation of this theory is the chief aim of the Gorgas Memorial in bettering the health of the public and increasing its longevity. The plan is not only to urge the people to be examined periodically by their physicians, but also to give every physician and practitioner of medicine the opportunity to become capable of giving these examinations properly. This opportunity is to be given them through the aid of standardized hospitals, provided by the health institutions, which are to give them every facility of aids necessary to them.

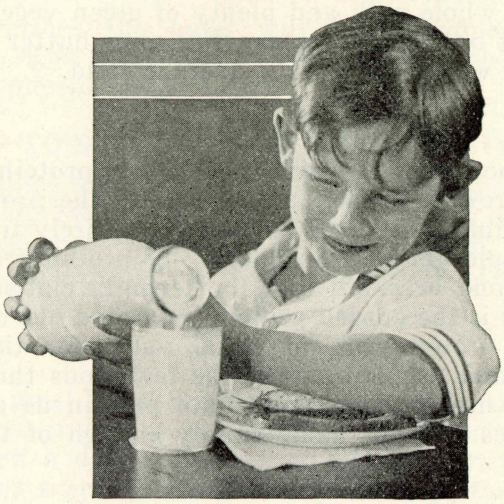
With a movement such as this pushing its way to the fore, the health of the people of the United States, and eventually of the world, will be made the most positive antitoxin to any disease.

There are countless obstacles to encounter before this "health aircastle" can be made a firm reality, but as the American people have gradually realized the value of good food combinations, preventive measures against disease, and sanitary living, so will they progress a step further in recognizing the importance and beneficence of the periodic health examination which was proved irrevocably by William Crawford Gorgas and which is now being furthered with untiring efforts by the memorial institute bearing his honored name.

A large and well-known firm of confectioners has devoted a recent issue of its house organ to the subject of health.

The most important feature of the publication is a summary of results of the first annual physical examination of all employees. The need for such examinations was conclusively demonstrated by the fact that only 4 per cent. of the women and 9 per cent. of the men were found free from defects which affect health. Impairments of the teeth, eyes, ears and nose were particularly common. Some of the significant defects revealed were hernia, and abnormalities of the heart and thyroid. The percentage of perfect condition was noticeably low in persons above the age of 40 years. A very large proportion of the ailments encountered in that group, however, were due to conditions that had been present for years and which could have been avoided, or at least ameliorated, through proper care earlier in life.—N. Y. Health News.

The supreme function of the medical profession is to educate the public in the knowledge of the laws of health and so to insure a healthy and happy community.—Arbuthnot Lane.



WHY DRINK MILK?

MILK IS THE INDISPENSABLE FOOD FOR CHILDREN

Prepared by the Children's Bureau, U. S. Department of Labor.

Milk is not merely a palatable drink but our most important food.

Not all kinds of food can make new tissue—bone, teeth, brain, or muscle. Milk is a unique food since it furnishes some of all the material necessary for building tissue, and it also supplies energy for work and play and warmth. The need for all tissue-building material is greatest during early life, the period of most rapid growth.

Milk is an indispensable part of the diet of mothers who are carrying or nursing babies and of young children. As long as a child is growing, milk should be included in the diet. A pint and a half a day is a safe allowance of milk for an average child. Pregnant or nursing mothers, infants after their first year, and many children need a quart of milk a day, but not more.

MILK PRODUCTS ARE VALUABLE FOODS

Skim milk, buttermilk, and cottage cheese contain the protein of whole milk but lack most of the butterfat and some of the vitamins.

Butter is an easily digested form of fat and contains large amounts of one growth-stimulating vitamin (A). Children who are receiving whole milk and plenty of green vegetables can get along without butter if necessary, but some butter in addition to whole milk is well taken by the average child.

MILK FOR PROTEIN

In our food there is a substance called protein which is necessary for growth. Milk can furnish all the protein the body needs. The infant receives his protein entirely from milk, and the adult should get a large share of his protein from some form of milk— whole or skim milk, buttermilk, clabber, or cottage cheese, which is the curded protein separated out of milk.

Not all proteins are of equal value for tissue building. Eggs, meat, and fish are among the few foods that contain the same sort of high-grade or adequate protein as milk. Cereals and vegetables can not alone supply enough of this quality of protein.

MILK IS THE BEST AND CHEAPEST SOURCE OF ADEQUATE PROTEIN

Milk furnishes not only the best but the cheapest body-building material. A quart of milk supplies as much protein as 7 ounces of sirloin steak or 4 large eggs.

THE YOUNGER THE CHILD THE GREATER THE IMPORTANCE OF GROWTH FOODS

Milk protein is good for everybody, but children need it especially. Every year growing children should add to their weight in new bone, blood, and muscle from 5 to 15 pounds, according to their age.

MILK FOR MINERALS

The body is not built of protein alone but requires a variety of other substances, including a number of minerals. The pregnant or nursing mother and the growing child must have an abundance of minerals in their diets; otherwise the child may show the deficiency in minerals by stunted growth, weak bones, or poor teeth. Special care must be taken to select foods rich in lime, phosphorus, and iron.

MILK OUR BEST AND CHEAPEST SOURCE OF LIME

Our bones and teeth are made largely of lime, which is a form of calcium. Lime is also a necessary part of the blood and of all body organs. One quart of milk will furnish as much calcium as 10 large oranges, 10 large helpings of cauliflower, 24 large helpings of carrots, 32 eggs, or 20 pounds of beef.

MILK A GOOD SOURCE OF PHOSPHORUS

Milk furnishes the body with considerable phosphorus. Whole cereals, eggs, meat, and fish are the best foods for furnishing additional phosphorus.

HOW TO SUPPLEMENT MILK FOR IRON

Milk supplies some iron but not enough. Leafy vegetables (such as spinach, kale, lettuce, cress, and parsley), egg yolk, liver, prunes, and beef supplement milk in regard to iron, and, properly prepared, should be given to infants and young children. (See Baby's Daily Time Cards.)

VITAMINS IN MILK

The body must be provided with certain essential substances called vitamins, if health and normal development are to be assured. When a diet is lacking wholly or partly in any one of the vitamins a special disease may develop, but long before this happens the child loses appetite, is ailing, ceases to grow normally, and is weakened in resistance to infectious disease.

HOW TO SUPPLEMENT MILK FOR VITAMINS

Whole milk, cream, and butter are the most important and most economical source of one of the vitamins (A). Other sources are egg yolk, liver, leafy vegetables, and cod-liver oil.

Another vitamin (D) affects tooth and bone formation just as direct sunlight does. Though milk fat may furnish a very little of this vitamin, it can not be depended on to supply sufficient for the infant. The most abundant source is such fish fats as cod-liver oil.

Other vitamins (B and C) are found in the breast milk of healthy mothers and in fresh milk from properly fed cows, but may be scarce or even lacking in poor, stale, or heated milk. Fresh fruits, especially oranges and lemons, and green vegetables are the best sources of these two vitamins.

Every baby, particularly if not breast fed, should receive daily the juice of some acid fruit, such as orange or tomato. In winter, when it is not possible for all infants to be in the direct sunshine outdoors for any considerable period every day, they should be given cod-liver oil, tested for vitamin D (the antirachitic factor), whether they are nursed or artificially fed. Breast milk may be deficient in vitamins if the mother's food does not contain enough vitamins.

HOW TO USE MILK

Whole milk is the best form of milk for the child, for all its parts—fat, sugar, protein, minerals, and vitamins—are necessary for growth. Children properly trained from infancy will drink

milk at every meal. Most dislike for milk has been suggested to children by the parents' distaste for it. Parents also should drink milk, as an example to their children.

Milk should be kept on ice to prevent the growth of bacteria, as any milk, however carefully produced and handled, may become contaminated with disease germs accidentally. For children under 2, all milk, whether pasteurized or certified, dried or evaporated, should be boiled before use to kill any disease germs that may have got into it. For children over 2, all milk except that which has been pasteurized, should be boiled. No milk should be used raw. Boiling milk, like drying or evaporating it, makes it easier to digest.

Ice cream, cheese, and all other milk products should be made only from pasteurized milk.

A WELL-ROUNDED GENEROUS DIET

Milk is an indispensable food for the child, but it should not be used as the only food after the early months of infancy.

Milk needs supplementing to supply certain minerals and vitamins and after the early months of life for energy and roughage. Because some vitamins may be injured in cooking, certain raw foods should be given daily to every child. In infancy fruit juices should be given, and later fruit and such vegetables as shredded lettuce, celery, carrots, or cabbage. Meat, fish, or eggs make the diet more palatable and enrich the food with protein as well as minerals and vitamins. Fresh green vegetables are needed for minerals and roughage.

Besides growth food, children need a great deal of energy food—plenty of whole-grain bread and cereal, potatoes, fat, and a little sugar.

WHAT MILK TO BUY

The cleanest and best milk obtainable should be bought. Whole milk, should be bought for children, unless the doctor advises otherwise.

Milk is perishable and is easily contaminated with disease germs from cows and from human beings. It should be taken only from healthy animals, and it should be chilled at once, kept clean, cold, and covered, and handled carefully throughout by healthy persons. Persons handling milk for distribution should have frequent medical examinations, and cows should be examined and tested regularly for tuberculosis.

Most housewives can not know whether their milk has been produced and handled properly. They must depend on

public inspection. Public-health officials and many other physicians recommended that all milk be pasteurized, even "certified milk" (milk produced and handled under as nearly ideal conditions as possible and certified by a medical milk commission). Proper pasteurization, which is heating for at least 30 minutes at a temperature that kills disease germs (143°-145° F.) is the final process necessary to make milk safe. It does not make poor milk a good food, but it adds an important factor of safety. The quality and the conditions of production should be as good for milk that is to be pasteurized as for milk that is to be sold raw.

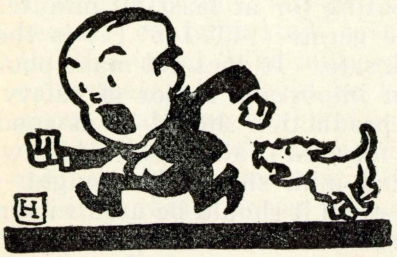
In cities and towns pasteurized milk should be bought—never raw milk unless it is certified—and it should be used within 36 hours of pasteurization. In rural districts where pasteurized milk can not be had, only milk from tuberculin-tested cows, produced and handled under good conditions, should be used. As much care should be taken with milk for use on the premises or for distribution to neighbors as is taken in the larger dairies.

USE MORE MILK FOR CHILDREN

The extensive use of milk as a food for infants, the sick and convalescent, makes it especially important that it be pure and wholesome, for young children are less able to resist the harmful effects of milk which may contain injurious substances. Therefore, much importance is placed upon the milk question and health officials regard the control and safeguarding of the milk supply as one of their major duties.—Chicago's Health.

The statement has been made and often repeated that there is but one way to contract typhoid fever and that is by eating it. This is doubtless true. The germs of typhoid are to be found primarily in typhoid patients or carriers only, they are discharged with the stools and urine, and it is by contamination of food or drink with these discharges that the infection is transmitted to susceptible persons. A minute quantity of the intestinal content may contain enormous numbers of typhoid bacteria and when mixed with a quantity of water so great that its presence could be detected only by a very delicate test would still be capable of producing typhoid fever. Any object, however slightly soiled with material containing typhoid germs is dangerous. That object may be the hands of a careless or untrained nurse attending a patient, a careless or uninformed carrier or convalescent, a spoon, cup or in fact any article that is used in human activities. — Dr. F. A. Brink.

RABIES



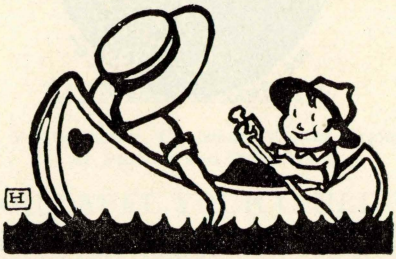
Rabies is not a summer disease regardless of popular ideas on the subject. It is prevalent the year round and heat or lack of water have nothing to do with its development, for it is an infectious disease. The records of the Missouri State Board of Health Laboratories show that during the past five years 240 cases of rabies were found during the six cold months of these years and 248 cases during the six warm months.

Not every dog, cat, or other animal that bites a person is rabid, for any normal self-respecting dog will bite under certain circumstances and some of them do not need much provocation to take a nip at a stranger. The possibility of rabies should always be considered when an animal bites a person and steps should be taken to find out if it had the disease, but killing it at once and sending the head to the laboratory, as some excited person will insist should be done, is exactly what should not be done. The decision as to whether an animal may be rabid or not is not a matter for the inexperienced person to decide. This decision should be left to a veterinarian and a family medical adviser, who are familiar with the subject, and they can judge best when they have an opportunity to observe the animal.

A dog which is under suspicion as being rabid is entitled to a fair trial before the death sentence is pronounced, both from the humanitarian standpoint and the safety of the community and, unless it shows definite physical symptoms and is attacking anything and everything that crosses its path, there is no definite evidence that it is rabid. The laboratory examines the brain for the presence of changes in the nerve cells which are called Negri bodies and when the animal is killed at the appearance of the first suspicious symptoms, very few of these bodies are present in the brain and it is difficult or impossible to find them. Under these conditions, it may not be possible to prove that the animal was not rabid and the unfortunate victim must take the treatment to be safe without knowing it was actually needed.

An animal which has bitten someone should be shut up in comfortable well-lighted quarters from which it cannot escape, and given plenty of food and water. If it is normal at the end of ten to fourteen days, it is not rabid, since an animal that is developing rabies and has reached the stage of the disease in which it can infect others will develop definite symptoms within a few days and die a few days later. When a rabid animal has

been held until there are definite symptoms, the laboratory has no trouble in finding evidence of the disease in the brain and when holding the animal for observation, the necessity for giving the antirabic treatment to persons who have been bitten and the time when this treatment should be started must always be left to the discretion of the family medical adviser. Bites on the face and neck require immediate attention since the disease will develop much sooner in such cases than when the wound is on some other part of the body. Treatment should be begun immediately in such cases and, if later observation of the animal shows that it was not rabid, the treatment may be discontinued, if the newer type of treatment is being used.—R. L. L.



PLANNING YOUR VACATION?

Why do you take a vacation? To rest and improve the condition of your health, or to expose yourself needlessly to the possibility of disease and sickness? The annual fall increase in typhoid fever would indicate that the latter purpose would receive the majority vote. However, common sense dictates otherwise, and it is known that vacation typhoid and other intestinal disturbances are the result of ignorance or carelessness in selecting a place to spend your vacation.

If you expect to take advantage of the many vacation resources of Missouri, be sure that the place you choose has been issued a 1930 permit to operate by the State Board of Health. Then you may be assured that the sanitary protections provided are a part of the recreational opportunities offered, and your vacation will be a success and not a liability.

Also, if you expect to travel by auto and take advantage of the many available tourist camps along Missouri highways, be sure that the proprietor can show you a 1930 permit from the State Board of Health before you register for accommodations. —W. S. J.

OUT OF BABYHOOD INTO CHILDHOOD

I. NO LONGER A BABY

Prepared by the Children's Bureau, U. S. Department of Labor

When your child begins to walk and talk he is no longer a baby. Though he is still dependent on you for almost everything he is daily becoming less so and learning to do more for himself. Encourage his increasing desire for independence. He develops rapidly between the first and sixth years, and during these years he should strengthen the foundations of a healthy body and mind that have been laid during infancy. Parents who help their child to do this are giving him an endowment for his whole life that will be of more value to him than any other kind of wealth. Parents who look upon the young child as "too little to be taught" or "too young to understand" are piling up trouble for him as well as themselves. Most life habits are learned during the early years. The child's first and most important teachers are his parents. They must work together and plan consistently for the child.

Healthy living depends largely on practicing health habits and avoiding disease. See that the child's habits of eating, sleeping, eliminating, bathing, and exercising are good. Do not let him go near a sick person even if the sickness is "only a cold" or "just a cough." At least twice a year take him to the doctor and to the dentist for examination and advice, so that defects

or early signs of trouble may be corrected. Have the doctor give him such special protection against disease as vaccination and immunization.

The home has an influence on the child that can scarcely be overestimated. A clean, orderly, and hygienic place to live is needed for the child's health, but this is not enough. The home is where his character develops, where he is constantly learning by imitation and experience. Listen to a child's play and notice how he imitates everyone around him. Now he is mother, hushing his doll to sleep; now father, lying on his back under a chair, "fixing the car." A child will do what he sees others do and say what he hears others say. Be sure that he finds good examples in his home.

ARE YOU HELPING YOUR CHILD TO GROW UP?

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman Mental Hygiene, Missouri Association of Parents and Teachers.

DO YOU LABEL YOUR CHILDREN?

"It is by no means rare to find that children in a family each receive a distinguishing, characteristic label by which they are known, such as the clever one, the artistic one, the pretty daughter, the stupid boy, the good or naughty one. This label is felt by the child to be inexorable or unchanging as fate. It must be lived up to, and this part must be played whatever happens. People would show surprise, the child feels, should the reputed brilliant one of the family say something silly, and imagines that the family would call whatever this one said clever. The stupid one would not dare to make a joke, even should one occur to him. The unmusical daughter must not compete for musical honors at home; neither can she whose fingers are reputed clumsy take up dressmaking or embroidery, even if she may long to do so. The naughty one also feels that his or her lot is irrevocably cast in advance, and that it is expected that he or she shall be true to the label under all circumstances; also that people would in any case impute mischief to such a one were it discovered, even had it been the work of another, so that he may as well do what is expected of him."

"For this reason children often feel that it is a great relief to go away from home or to pay visits without other members of the family, because they think these would be on the look out all the time to see whether they lived up to their several reputations or if they behaved differently away from the home environment or with other people."—From "Difficulties in Child Development," by Mary Chadwick.

MISSOURI WATER AND SEWERAGE CONFERENCE

THE CROSS CONNECTION

The State Board of Health regulations state that "No physical connections shall be permitted between any potable public water supplies either through cross connections, auxiliary intakes, or bypasses and that of any other supplies, except with a water supply approved by the State Board of Health."

The most common example of a cross connection is between a municipal supply and a private supply in a factory, where the municipal supply is used for ordinary purposes and the private supply is installed for fire protection. The cross connection is generally used to eliminate the cost of a double distribution system, and to provide an adequate supply in the event of fire. Among the almost innumerable other types of cross connections are found such things as connections to pressure filters of swimming pools, which may force water back into the mains during the backwashing period, and permanent connections to the priming cocks of sewage pumps, which allow sewage to be forced into the water mains if the priming cock is left open.

Even though the pressure of the municipal supply is normally higher than that of the supply with which it is connected, there is always a possibility of water from the latter entering the former in event that the city pressure is allowed to drop for some reason, such as repair of the mains or a heavy water demand ahead of the cross connection.

Obviously, the danger from a contaminated water supply entering a public water supply system is a serious matter, since it will result in the city supply becoming contaminated. Eight thousand and twenty-eight cases of typhoid fever and over 11,000 cases of enteric disturbances have been recorded in this country as being caused by cross connections. These figures probably represent only a very small portion of the total cases, since records of this sort are naturally very incomplete. Most authorities agree that, in the event of contamination reaching a municipal water supply through a cross connection, those in charge of the city supply are liable for any damages which might result.

Probably no single item of such paramount importance to the safety of a city water supply has been so universally neglected and overlooked by the superintendent as the cross connection. Investigations have revealed that in many cases where the superintendent believed that no cross connection existed, upon careful survey many have been found. The only safe policy for the superintendent to follow is to have a signed statement from at least all industrial users that no cross connections with the city supply are maintained.

Various methods of protecting cross connections have been devised. These include single or double valves, single check valves, double check valves, and automatic chlorinators which begin operation as soon as the cross connection supply is used. Valves and check valves have caused much difficulty in the past by not functioning at the critical time. Generally they are buried and are not given regular inspection, and, as a result, become corroded and clogged and will not function. The double check valve, designed by the Associated Factory Mutual Fire Insurance Company, and automatic chlorinators reduce the danger from cross connections to the minimum, if they are inspected and repaired periodically. However, any mechanical device is subject to failure, and the only absolutely safe solution of the cross connection problem is the removal of every physical connection between a municipal supply and any supply which is not of approved quality.

In order to secure data on the number and types of cross connections in this state, the State Board of Health has addressed a questionnaire to each water works superintendent, asking the number of cross connections, with what supply the connection is made, and if it is protected by devices such as valves or check valves. It is suggested that each superintendent make a cross connection survey of the distribution system before filling out the questionnaire.—H. M. B.

NOTES—MISSOURI WATER AND SEWERAGE CONFERENCE

Final inspection and approval was made by the State Board of Health of the recently completed sewerage system at Wellsville and the public water supply at Bismarck.

Plans and specifications for a water and sewerage system for Belton, Missouri, were approved by the State Board of Health in June.

The State Board of Health is pleased to announce that the services of Mr. Fred M. Shields have been secured as milk specialist. Mr. Shields takes the place of Dr. F. A. Clark, who was loaned by the U. S. Public Health Service for eighteen months. Mr. Shields has had six years experience in the control of city milk sanitation under the Standard Milk Ordinance in Texas. As a member of the Division of Public Health Engineering and Sanitation, Mr. Shields will aid materially in improving the services which this division has available for cities in Missouri.

Until public health becomes a private responsibility it will not become a public achievement.—Glenn Frank, President, University of Wisconsin.

OF PUBLIC HEALTH INTEREST

The Blue Ribbon Baby Contest and Six-Point Child Health Contest will again be a feature of the Missouri State Fair at Sedalia August 16 to 23 inclusive. Prizes will be awarded to the winners in the various classes and three cups will be awarded to those counties having the greatest number of six-point children in attendance at the fair. Entry blanks may be obtained by addressing the Missouri State Fair, Sedalia, Missouri.

Eighteen thousand, five hundred forty-four six-point buttons and 16,277 nine-point buttons were distributed to the school children of Missouri by the Division of Child Hygiene of the State Board of Health in 1929. More nine-point buttons were awarded in 1929 than there were six-point buttons distributed in 1928 when the totals were 12,714 six-point buttons and 11,576 nine-point buttons. Both the 1928 and the 1929 totals show substantial increases over the 1927 totals when 10768 six pointers and 4,675 nine-pointers were awarded buttons.

Dr. James Stewart attended the conference of State Health Officers, called by the Surgeon General of the U. S. Public Health Service at Washington, D. C. during the week of June 15.

Dr. Irl B. Krause attended the annual meeting of the American Medical Association at Detroit, Michigan, June 23-27.

The first physician to advocate periodic health examination was Doctor Horace Dobell, of London, who published a book on the subject in 1864. Dobell wrote in the following almost apocalyptic language:

"The manner in which man is to exercise his instrumentality for the prevention of disease, the prevention of the vestiges of disease, and the prevention of fatality in disease, is to search out these earliest evasive periods of difficulty in the physiological state, and to adopt measures for their remedy. * * * I wish, then, to propose, as the only means by which to reach the evil and to obtain the good, that there should BE INSTITUTED AS A CUSTOM a system of periodical examination to which all persons should submit themselves, and to which they should submit their children.

The basis of the value of human life must naturally be health—without health, earnings usually drop. It is when the breadwinner of a family is removed through accident or disease and the mother and young children must become self-supporting that, first the dependents, and later the community, realize the large capital value which has been lost.—From Current Information, White House Conference on Child Health and Protection.

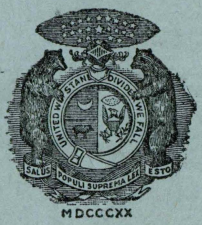
COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF MAY, 1929 AND 1930

Diseases.	1929	1930
Chickenpox	243	383
Diphtheria	185	160
Epidemic Sore Throat	4	21
Influenza	47	16
Malaria	26	46
Measles	870	617
Meningitis	66	38
Mumps	135	268
Ophthalmia	2	4
Pellagra	.....	1
Pneumonia	34	42
Rabies in animals	13	9
Scarlet fever	290	618
Smallpox	136	292
Trachoma	26	52
Tuberculosis	203	297
Typhoid fever	114	38
Whooping cough	362	181
Undulant fever	1	8

MISSOURI PUBLIC HEALTH NEWS

"The Welfare of the People is the Supreme Law"

VOL. II AUGUST, 1930 NO. 12



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THE STATE BOARD OF HEALTH OF MISSOURI

JAMES STEWART, M. D.
State Health Commissioner

JEFFERSON CITY, MISSOURI

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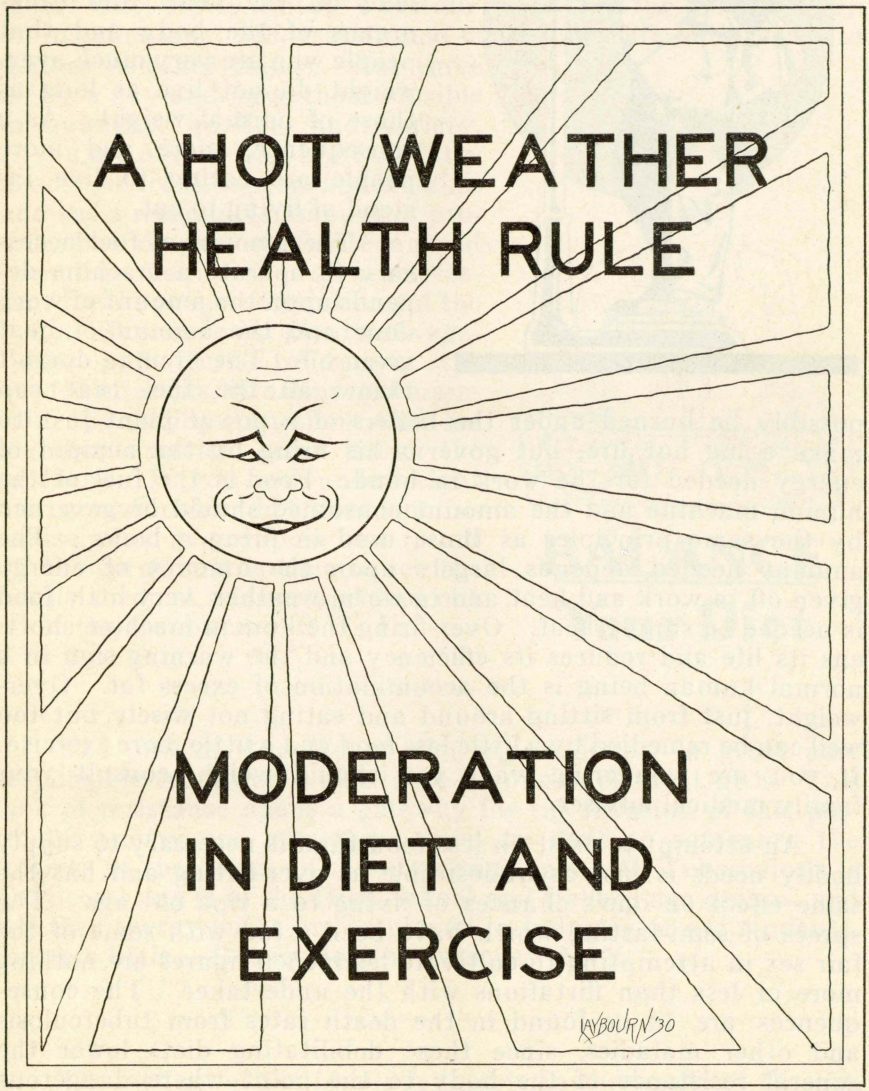
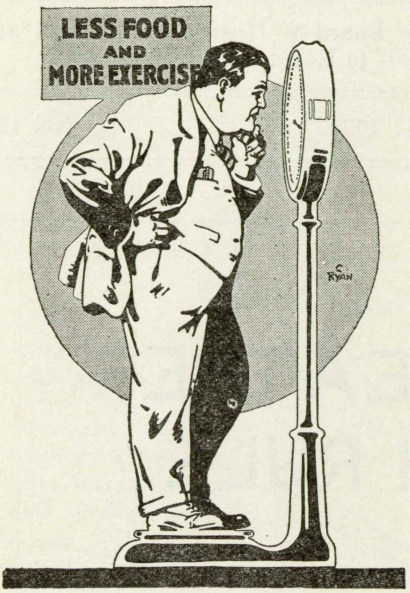


THE FEED LIMIT



"Width and wisdom go together" was a fine alibi for serious eaters until the statisticians came along and showed that hoarding surplus food in one's anatomy in the form of fat is simply putting an unnecessary load on the heart and other organs of the body and that people who are very much overweight do not live as long as those of normal weight. As a consequence, more and more people are eating to live instead of living to eat.

The amount of fuel necessary to operate a machine depends upon the amount of work done and the amount of heat given off. The fireman doesn't throw all the fuel that can possibly be burned under the boilers of a power plant just to make a big hot fire, but governs his firing by the amount of energy needed for the work in hand. Food is the fuel of the human machine and the amount consumed should be governed by the same principles as those used in firing a boiler. The amount needed depends largely upon the amount of energy given off in work and heat and in warm weather, very little food is needed to supply heat. Over-firing the human machine shortens its life and reduces its efficiency and the warning sign in a normal human being is the accumulation of excess fat. Overweight, just from sitting around and eating not wisely but too well can be remedied by a little less food and a little more exercise. If you are wondering what you should weigh, consult your family medical adviser.

An attempt to exist on less food than is necessary to supply bodily needs is just as undesirable as over-eating and has the same effect on one's chances of living to a ripe old age. The sprees of semi-fasting which have been a fad with some of the fair sex in attempting to cultivate leadpencil figures are nothing more or less than flirtations with the undertaker. The consequences are to be found in the death rates from tuberculosis and other maladies, since these debilitating diets lower the general resistance of the body to the point where dangerous bacteria easily gain a foothold in the faddist's system and carry

out their nefarious business of destruction and death. There is a difference between being slender and being thin and if nature has not modeled your bony framework on slender lines, a diet of lamb chops, vinegar and a lettuce leaf is not going to change it. Of course, no one particularly admires an over-emphasized figure, but a reasonable amount of fat is necessary as a reserve supply of energy for emergencies so, lady, be reasonable; moderately rounded corners are one of the indications of a healthy and well-regulated body.

There is a feed limit and it does not pay to exceed it too much or to reduce the food intake to the point where the human motor must try to imitate a certain make of automobile and run on imagination. Moderation and consistency are both jewels in diet as in other things. Eat three meals a day and have them sensible in quantity, quality, and variety. If you are overweight, limit the fatty goods, reduce the sugars and starches and eat a reasonable amount of protein, but do not eliminate any of them from your diet as all are necessary for the proper functioning of the body. Be sure to eat plenty of vegetables and fruits to supply the needed minerals, vitamins and maintain the bodily functions and remember exercise helps solve the problem. If you are underweight and a reasonable diet does not increase your avoirdupois and round off the corners, it is time to see the family medical adviser and find out what the trouble is.—R. L. L.

BALANCE
Your Diet

The present day fad of diet is, no doubt, in great part responsible for lowered resistance among adolescent girls. This lack of resistance opens a gateway for the invasion of this particular enemy and something must be done to safeguard the fortress of the body. The only period in which Tuberculosis is not decreasing is in the High School and College age groups, and whether these youths are employed in industry or are students, matters little.—Better Health, Syracuse, N. Y.

The welfare of the family is largely in the hands of the one who provides the "three meals a day."—Dr. Mary S. Rose.

FIRST AID FOR SUNSTROKE

There's no time for indecision when sunstroke attacks a person. His life may hinge on whether or not *you* know the correct treatment. Excessive exposure to the rays of the sun brings this condition. Resistance may be developed through health habits, through the wearing of proper clothing, and through avoidance of over-fatigue and alcohol. The symptoms are pain in the head, hot and dry skin, no perspiration, labored and feeble breathing. * * * If someone should collapse near you from the heat of the sun, what should you do? * * * Send for the doctor at once, and then do everything possible to reduce the victim's temperature. Take him to a cool place and remove as much clothing as possible. Apply cold water or ice to his face, neck, chest and arm-pits. Better still, put him in a very cold bath or wrap him in sheets wrung out of cold water. Then keep these sheets wet and cold with more water or ice. If this is done, rub his body continually to prevent shock. When consciousness returns he may be allowed to drink all the cold water he wants and the cold applications may be discontinued. But if the skin again becomes hot, the applications must be renewed. Don't give him any stimulants. Be prepared for such emergencies.—National Safety Council.

STATE-WIDE DIRECTORY OF SOCIAL AGENCIES COMPILED

A classified directory of the social and health agencies in Missouri has been compiled by the Missouri Conference for Social Welfare. This handbook will be invaluable to all civic, social, and health workers over the state.

It had to be published on a mutual co-operative basis, so a minimum charge of fifty cents is made for it. Orders should be sent to Harold J. Matthews, Executive Secretary, Missouri Conference for Social Welfare, Columbia, Missouri.

FAIR GROUNDS SANITATION

The season for district and county fairs in Missouri is now approaching. Fair officials co-operated very satisfactorily last year with local health officers and the State Board of Health to see that sanitary conditions complied with the state sanitary regulations. These include three main requirements: (1) As to safe water supply; (2) as to proper waste disposal on the grounds; and (3) as to sanitary methods of handling food and beverages.

WATER SUPPLY

Some fair grounds are provided with water from public water supply systems which are approved by the State Board of Health. The use of public water supplies is recommended where available. The State Board of Health has inspected and analyzed private wells and springs supplying water for fair grounds, and has recommended changes where necessary. In several instances, recommendations have been carried out and safer water can now be obtained at these places.

WASTE DISPOSAL

Where water under pressure allows the use of water flush toilets, such facilities are recommended. Pay toilets can be installed and the revenue used to pay for and maintain the accommodation. Proper sewage disposal systems are, of course, required for water flush toilets, either connection with sanitary sewers, or septic tanks with proper effluent disposal.

Many of the smaller fairs and some of the larger ones are found to maintain outdoor privies, on account of not having a pressure water system on the grounds. In this case, the State Board of Health regulations require that privies shall be built over a deep pit and equipped with fly-tight seat boxes, ventilators, and self-closing lids. These need attention during the fair in order to insure satisfactory conditions. Plans for the construction of sanitary pit privies will be mailed to anyone upon request.

The problem of disposal of rubbish and garbage, deposited by the public and persons renting concessions, can be solved to a large extent by fair officials providing suitable receptacles and arranging for such material to be removed from the grounds once or twice daily.

SANITATION OF FOOD AND BEVERAGES

Protection of food, beverages, drinking straws, etc., must be provided. It is certainly not sanitary, safe, or even sane, to

serve such material after it has been exposed to dust and flies. Beverages should be kept in closed containers and drawn with faucets, or, if it is absolutely necessary to use pitchers or other open top vessels, they should be kept covered when not serving.

Provisions should be made for thorough washing and disinfection after each using of all glasses, cups, spoons, and dishes which are subject to repeated use. However, it is recommended that single service utensils, such as paper dishes, cups, and spoons, be used.

OUTLOOK FOR 1930

The co-operation manifest by fair officials last year indicates even a more satisfactory compliance with state sanitary regulations during the coming season. The health authorities are prepared to co-operate by inspecting fair grounds and concessions, and taking any other steps necessary to add to the health and success of Missouri state, district, and county fairs—W. S. J.

WATER SHORTAGE

The attention of this department has been called to several cases in the past month where there is a threatened or actual shortage in the public water supply. This condition has usually resulted from an excessive use of the public water supply during the unusually hot weather and not because the source of supply is failing. In most cases the difficulty has been directly traced to the use of unusual quantities of water on lawns, flower beds, and gardens.

It is a worthy civic ambition to maintain beautiful lawns and gardens, however, no straight thinking person would place aesthetic considerations ahead of the importance of assuring health and property protection within his city. Consequently, water works and city officials must control the use of excessive water from the public supply when such use endangers the quantity of water available for more important purposes. If citizens refuse to co-operate in such conservation measures, the situation demands drastic action, such as cutting off the city supply to these offenders. The special rights of a few should not and cannot be considered when these may endanger the welfare of many.

It is of interest to note that seldom is there a water shortage from excessive use when the connections are one hundred per cent metered. This is another excellent argument for metering, and if a threatened water shortage brings about more effective metering, then such can not be considered an "ill wind that blows no good."—W. S. J.

PIN THESE RULES ON YOUR BATHING SUIT

Knowledge of Prone Pressure Resuscitation May Enable You to Save a Drowning Person

Do you know how to swim? Do you know how to save the life of one who is apparently drowned?

Familiarize yourself with the principles of Prone Pressure Resuscitation, given below. Practice them. The information may come in handy.

1. Lay patient on his stomach, one arm extended directly overhead, the other bent at elbow, with face turned outward and resting on hand so that nose and mouth are free for breathing.

2. Kneel straddling the patient's thighs with your knees placed at such a distance from the hip bones as will allow you to assume a comfortable working position over the patient. Place the palms of the hands on the small of the back with fingers resting on the ribs, the little finger just touching the lowest rib, with thumbs and fingers in natural position, and the tips of the fingers just out of sight.

3. With arms held straight swing forward slowly so that the weight of your body is gradually brought to bear upon the patient. The shoulder should be directly over the heel of the hand at the end of the forward swing. Do not bend elbows. This operation should take about two seconds.

4. Now swing backward so as to completely remove the pressure. Then repeat the operation, regularly, timing it to about twelve to fifteen times a minute.

5. Continue without interruption until natural breathing is restored. Patients have been brought back to consciousness after four hours' work.

6. An assistant should loosen clothing about the patient's neck, chest and arms as soon as resuscitation starts.

7. Keep patient warm. Do not give any liquids whatever until patient is conscious.

8. To avoid heart strain patient should be kept lying down after recovery. If the doctor hasn't arrived upon recovery, patient should be given some stimulant, such as one teaspoonful of aromatic spirits of ammonia in small glass of water, or a hot drink of tea or coffee.

9. The work should be done immediately at nearest possible point to where patient receives injuries. He should not be removed until breathing is normal and he is fully recovered.

The treatment is to be used in gas or electrocution cases as well as drowning.

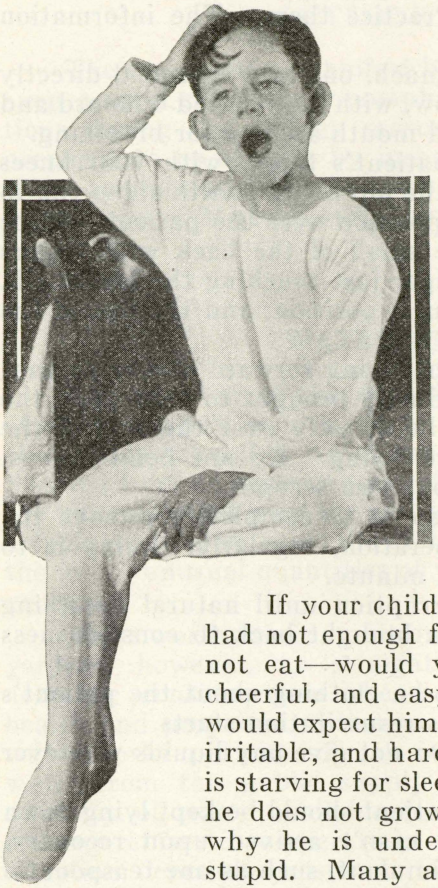
Try it now—and teach others. You may find that it pays to know how!—Nat'l Safety Council.

WHY SLEEP?

Sleep Helps Children Grow

Prepared by the Children's Bureau
U. S. Department of Labor

HOW DOES YOUR CHILD SLEEP?



Does your child sleep long enough and soundly enough? Is he rested when he wakes, or is he still tired? Does he go to bed happily every night at the same early hour, or does he tease you into letting him stay up late? Does he play hard all day without a rest so that he is too tired to sleep well at night, or does he get a daytime nap as well as a long peaceful night sleep? Does he go to sleep as soon as he goes to bed or does he lie awake, turning and tossing? In short, is your child getting all the help from sleep that he should, or is he struggling along on a starvation allowance of sleep?

If your child were starving for food—if you had not enough food to give him or if he would not eat—would you expect him to be healthy, cheerful, and easy to get along with? No; you would expect him to be undernourished and pale, irritable, and hard to manage. But many a child is starving for sleep; yet his mother wonders why he does not grow properly, why he is naughty, why he is undernourished, or why he seems stupid. Many a mother sees that her child is overactive and restless and hears him say that he is not sleepy, and she thinks therefore, that he is not tired, that if he needed sleep he would go to bed readily. Such a mother does not realize that the very child who does not want to go to bed may be the one who needs sleep most.

Enough sound sleep is one of the three essentials for a child's health; the other two are right food and outdoor play in the sun. These three essentials depend on one another. If a child gets plenty of simple food and vigorous outdoor play in

the sun, he is likely to sleep well. If his diet is improper and he sits around indoors all day he may sleep poorly. If his sleep is disturbed or too short he may be tired and unable to make the best use of his food, and as a result may be undersized or underweight, even though he is not underfed.

If your child is well grown, if he has firm muscles, rounded outlines, erect posture, a rosy skin, clear eyes without circles under them, a happy disposition, and a good appetite he is probably getting the right kind and amount of sleep.

HOW MUCH SHOULD YOUR CHILD SLEEP?

A child grows most when asleep. When he is awake the food that he has eaten is used to supply him with energy for his play and other activities. When he is asleep his activities are cut down to almost nothing, and his food can be used to renew the tissues that have been worn out by the day's play and to building new tissues. The building of new tissue is called growing. If the child gets too little sleep his growth is hindered.

The faster a child is growing, the more sleep he needs. (Adults need less sleep than children because they have stopped growing.) A baby less than a year old grows very fast and therefore sleeps most of the time. When he gets a little older he does not grow so fast and therefore does not need so much sleep. After about a dozen years, when the child enters the adolescent stage, growth speeds up again, and this older boy or girl needs even more sleep than the child a year or two younger. Many parents do not know this and permit these older children to stay up later than the younger ones. As a result boys and girls 13 to 15 are often listless and inert. They may be sleepy and tired most of the time, and unable to concentrate on their lessons.

Steady loss of sleep is bad for a child's mental and physical development. A full allowance of unbroken hours of restful sleep helps normal bodily growth and alert mentality.

Sleep Required by the Average Young Child
(Including daytime sleep)

At birth	21-22 hours
At 6 months	18 hours
At 1 year	16 hours
2-5 years	14 hours

Sleep Required by the Average Older Child

6-7 years	12 hours
8-10 years	11 hours
11-12 years	10-11 hours

Sleep Required by the Average Youth

13-15 years	10-12 hours
16-18 years	9-10 hours

THE HABIT OF THE EARLY BED HOUR

Sleeping at regular hours is a habit that you must start for a new baby. If you accustom your child to a regular bedtime from infancy you not only help his chances for normal development of body and mind but also simplify your own problems of child management, for, as years pass, your child will continue to go quietly, unquestioningly to bed. Almost all children who go to bed unwillingly or sleep too little have not been trained properly in early infancy.

The habit of an unbroken night sleep—from 6 p. m. to 6 a. m.—can be established fairly early in the baby's life. Most newborn babies sleep all day and all night, waking only to be fed. Give your child a good start by training him to sleep through the night without a feeding as soon as he can do this and still continue to develop normally. For the first nine months most babies need a feeding at 10 p. m., and for the first two months some babies need also a 2 a. m. feeding, but by the end of the ninth month the unbroken night sleep should last from 6 p. m. to 6 a. m. If a child has the habit of wetting the bed it may be necessary to wake him to go to the toilet. (See Child Management, Children's Bureau Publication 143, pp. 11-17.) The habit of a 12-hour night sleep, with regular daytime naps or rest periods in addition, should be continued until the child is at least 7 years old.

The early bedtime habit—6 o'clock during infancy and not later than 7 throughout early childhood—should be unbroken. If the rule is clung to without any exceptions, evening entertainments such as movies will never be in the child's program and they will not be expected.

Do not keep the child up to entertain visitors, and do not allow him to stay up because he begs to. It is unwise to give in to a whining child, and permitting him to lose sleep in this way leads to a vicious circle: Loss of sleep makes him irritable and overactive, and overactivity makes him restless and wakeful so that on following evenings it becomes harder and harder to get him to go to bed. On the other hand a child who goes to bed tranquilly is likely to sleep well and to be easy to manage the next day. Clashes between parent and child are often due to the fact that the child is worn out from lack of sleep.

THE DAY'S EFFECT ON THE NIGHT'S SLEEP

Your child's night rest depends largely upon how he has spent the day. An exciting day, without a nap, may leave a child literally too tired to sleep. Especially should the end of the day be free from excitement. The half hour before bedtime should be devoted to quiet pleasures, without romping, exciting games or stories, or any activities that are stimulating.

Proper rest in the daytime helps to give the child a good night sleep. The young baby gets plenty of day and night sleep. As he grows older his waking hours are longer, and the mother should see that his main sleep is at night, and that he gets also two daytime naps, a long one in the morning and a short one in the early afternoon. As a rule by the second year only one nap need be taken in the daytime—a long one, at whatever time of day is most convenient for the mother; such as 10 or 11 in the morning or after the midday meal. In winter the forenoon hour would seem best so that the child may have the midday hours for play in the sun. The nap should not last later than 2.30 in the afternoon, lest it keep the child from sleeping at night. Even if the child does not sleep he should spend the nap time in bed undressed. The daily nap or rest period should be kept up until the child is 7 years old.

Most babies can learn to take daytime naps outdoors in the sunshine if their eyes are shaded and care is taken that the skin is not burned. On very hot days the baby should not be put in the sun in the middle hours of the day. Sleeping in the sun gives the baby the benefit of the sun's rays, but if the bright sunlight or the noise in the yard keeps him from sleeping he may have to take his naps on the porch or in the house. If the baby's long nap is taken in the shade the day's program must be arranged so that he will get his sun baths when awake. A child past the second year should take his nap in his own bed.

DOES YOUR CHILD HATE BEDTIME?

If your child has the habit of staying up late it will be hard to break it, but you can do it. Ask yourself first why the child does not want to go to bed.

Has bedtime pleasant associations for the child? If you put him to bed as a punishment when he is naughty, he will feel that there is something unpleasant about going to bed. If you have done this in the past it will be hard to change this idea, but you can at least give up using bed as a punishment. Do not let him feel that he is missing pleasure by going to bed. Go into his room with him and stay till he is tucked in. Then leave him alone, but do not seem in a hurry to get away. If the child is afraid of the dark do not leave a light burning in his room, but do not expect him to sleep with his room completely dark until he has learned to conquer his fear. A little light from a street lamp, or from the hall through a partly closed door, not shining in his eyes, may help. If he has other fears that make him dislike being in his room alone, help him to conquer them.

Does the child get his daytime nap regularly? If not he may be wakeful at bedtime.

Do you always put the child to bed at a regular hour? If not, begin tonight to put him to bed at the hour that you have

decided on, and make no exceptions. Treat bedtime in a matter-of-fact way; do not argue about it. Give the child warning about five minutes before bedtime, so that he can come to a stopping place in what he is doing. Do not announce bedtime too suddenly.

Do both parents try to make the half hour before the child's bedtime a time of quiet play, without exciting games or stories? Active play during the day makes children pleasantly tired, but just before bedtime it makes them wide awake.

Are you firm about the child's staying in bed quietly after you leave him? If he keeps calling to you and asking for a drink of water or anything else that will get your attention, teach him that this will not work. See that all necessities are attended to before the child finally is tucked into bed; then ignore all calls from him, unless you think there is a real emergency.

DOES YOUR CHILD SLEEP FITFULLY?

If your child goes to bed readily but stays awake or sleeps fitfully, find out the cause of his poor sleep.

Has he had enough active play during the day to tire his muscles?

Is his physical condition good? Ask the doctor about this. Enlarged or diseased adenoids or tonsils or other defects may keep a child from sleeping well.

Does the child have a bed to himself? Children in bed together may stay awake to play. Any bed that is large enough to hold two children can be replaced by two cots in which they can sleep separately. For many reasons it is important that every child should sleep alone. For a baby it is easy to make a clothes basket or a large box into a comfortable bed.

Is the room at a comfortable temperature (45° to 55° F. in winter, and as cool as possible in summer), with plenty of fresh air from open windows?

Is the bed comfortable? The spring and the mattress should be firm and flat, not sagging in the middle. If a pillow is used it should be thin and not too soft. The sheets should be large, so that the edges will stay tucked in all night; the blankets light in weight and wide enough to keep out drafts. For a child who kicks off the covers try a sleeping bag.

Are the child's nightclothes comfortable? Are they loose, so that they do not bind the child anywhere? Of course the child should be entirely undressed before his nightclothes are put on.

Is the child's supper satisfying and easily digestible, so that his sleep will not be disturbed by hunger or indigestion? Keep him from drinking much liquid at night; a full bladder may make him wakeful.

Do you try to prevent loud or sudden noises from reaching the child's room? The house need not be hushed at night, and

you should train your child to sleep through ordinary talking or other minor disturbances, but his bedroom should be as far as possible from the radio. Early-morning noises should be prevented as much as possible, for sleep in the early morning is lighter than the first sleep at night.

IS YOUR CHILD GETTING RESTFUL SLEEP?

Study your child's sleep, not only counting the hours that he sleeps but also asking yourself whether these hours are restful. If a child falls asleep in your arms—at the movies or in an automobile—his position is cramped and the surroundings are not restful.

Put your child to bed by the clock. Try keeping a chart some week, noting each day the time the child goes to bed. In summer, when much of the evening is light, especially where daylight-saving time is observed, be sure that the child goes to bed at his regular time by the clock. If he is used to taking daytime naps he should have no trouble in sleeping before dark. If an illness breaks the routine, get back to regular habits as soon as possible.

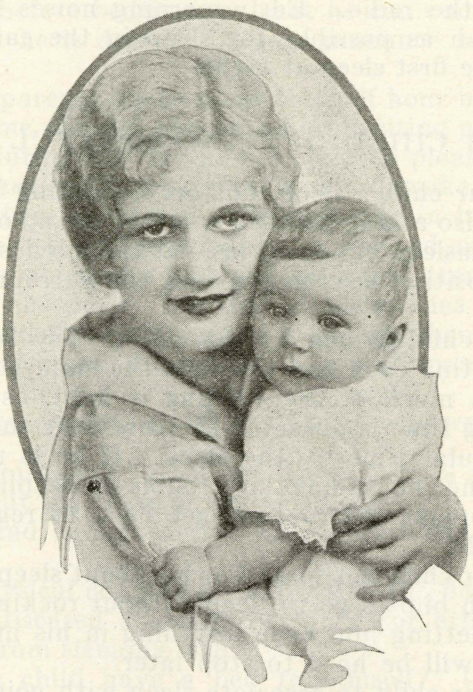
Train your child not to be finicky about sleeping. While he is a baby teach him to go to sleep without rocking him, singing him to sleep, letting him keep anything in his mouth, or other coddling that will be hard to stop later.

Teach your child to associate sleep with going to bed. Be sure he is awake when you put him into bed and do not let him form the habit of falling alseep anywhere else.

Try to prevent loud or sudden noises. These are nerve-wearing on a child at any time; and they may prevent sleep and cause unnecessary fears. A child in noisy surroundings tends to sleep and wake fitfully and may be unrefreshed even if he has been in bed long enough to have had plenty of sleep.

Do your part in preventing unnecessary noise in the neighborhood. Do not let your older children roller-skate or shout in the evening in the yard or street. Join with your neighbors in taking a stand against unnecessary noise in such early-morning activities as milk delivery and garbage collection and in making your block or apartment house fairly quiet at night.

Too much stress cannot be placed on the importance of physical examinations for school children. There is much to be criticized in a system which permits a child to be admitted to school on reaching a certain age in life irrespective of his physical or mental condition. As a means of stimulating the intellectual performance of hundreds of children to be educated at public expense, a health promotion is a striking measure of economic importance.—Wisconsin Health Bulletin.



OUT OF BABYHOOD INTO CHILDHOOD

II. HABITS

Prepared by the Children's Bureau
U. S. Department of Labor

Habits are learned by doing the same thing again and again. Children readily learn habits of talking, thinking, feeling, and acting. It is no harder for them to form good habits than bad ones. The more satisfaction there is in doing a thing the first time the easier it is to do it the second; if there is no satisfaction at all in doing it the child probably will not do it again.

Smiles and words of approval give children much pleasure. When the child is learning to feed himself praise his efforts and do not scold if he spills his food. Do not hurry him when he is learning; it takes time to get skill in handling a spoon or lacing a shoe. Bedtime, naptime, and mealtime are too often times of scoldings and tears because the mother is in a hurry or the hour is late. Plan your day so that you can take time to be patient, firm, and gentle in guiding your child.

Attention is what every child wants. If you ignore him when he is good and fuss over him when he is naughty he will be naughty in order to get this attention. Watch for opportunities to praise the child, not to punish him. Punishments are useful only in teaching him what he must not do. They do not teach good habits and may even stress bad ones too much. Never punish a child when you are angry and never make threats that you can not carry out. Punishments that can well be used with a little child are putting him into a room alone (not in the dark) and taking away some pleasure. Keeping him away from other children for a while is a fair punishment for quarreling with them; the most effective punishments are closely related to the misdeeds. Punishing to-day the same misdeed that was ignored yesterday is worse than useless; discipline to be effective must be consistent.

Regularity is a great help in habit building. A child finds routine pleasing and restful; discipline to be effective must be consistent. If his habits of eating, sleeping, and going to the toilet are regular he is laying the foundations of health.

Parents must work together to give the child good habits.

SANITARY SAMBO SAYS:

The mosquitos are biting well this summer and so a lot more folks are shivering, shaking and burning up with malaria. There's only one way to get malaria and that's from the bite of a certain kind of mosquito which has already bitten some one who has it.

You can get rid of mosquitos by cutting down the brush and weeds which they use for shelter near houses and their breeding places and by draining the pools or oiling the water where they breed.

TOURIST CAMPS AND RESORTS APPROVED BY THE STATE BOARD OF HEALTH OF MISSOURI

In accordance with the regulations of the State Board of Health governing sanitation of resorts, tourist and other camps, placed into effect January 1, 1929, many camps and resorts have been approved and issued permits. For the benefit of any concerned, a list of the places approved to date is given herewith. The permits are issued to indicate approval of water supply, sewage and garbage disposal, and general sanitary conditions.

TOURIST CAMPS AND RESORTS ON STATE AND U. S. HIGHWAYS

State Highway No. 1

Star Cottage Camp.....22nd and Garfield, St. Joseph.
Red Robin Resort.....St. Joseph.
Happy Hollow Tourist Camp.....Gower (5 miles south).

State Highway No. 4

Clearwater Beach Resort.....Rushville.
Lakeview Resort.....Rushville.
Horse Shoe Lake Resort.....St. Joseph.
Summit Hall Resort.....St. Joseph.
Frogg Hop Resort.....St. Joseph.
Breakaway Ball Room.....St. Joseph.
Courtney's Inn Resort.....St. Joseph.
Lake Contrary Park.....St. Joseph.

State Highway No. 5.

Osage Inn Resort.....Linn Creek.
Top of the Ozarks Tourist Camp.....Lebanon.

State Highway No. 10

Phillips Camp.....North Kansas City.

State Highway No. 13.

Hill Top Tourist Camp.....Warrensburg.
Camp Joy.....Willard.
Sunshine Hill Camp.....Willard.
Twin Rivers Camp.....Springfield.
Limberlost Inn.....Galena.

State Highway No. 14

Finley River Camp.....Ozark.

State Highway No. 16

Monett City Park.....Monett.
Neosho Tourist Camp.....Neosho.

U. S. Highway No. 24.

Shaw's Tourist Camp.....2927 St. Mary's, Hannibal.
Dew Drop Inn Tourist Camp.....1209 Bond St., Moberly.

State Highway No. 25

Dixie Park.....Kennett.

State Highway No. 28

James Bros. Resort.....Vienna.

State Highway No. 32

Heck's Camp.....Desloge.

U. S. Highway No. 36

Hannibal Tourist Camp.....Fourth and Church Sts., Hannibal.
Monroe Tourist Camp.....Monroe City.
Renner's Tourist Camp.....Clarence.
Beacon Tourist Camp.....Chillicothe.
Bungalow Camp.....Hamilton.
DeLuxe Cottage Camp.....Cameron.
J. W. Weiss Tourist Camp.....St. Joseph.
De Luxe Tourist Camp.....St. Joseph.
Shady Lawn Camp and Resort.....St. Joseph.
Kleinbrodt's Resort.....St. Joseph.

U. S. Highway No. 40

Smith Bros. Tourist Camp.....7500 St. Charles Rd., St. Louis.
Evening Star Tourist Camp.....Pattonville.
J. E. Avery Tourist Hotel.....Pattonville.
Lincoln Park Tourist Camp.....St. Peters.
Whitehouse Inn.....Wentzville.
Play Ground Camp.....Wright City.
Little Village Camp.....Wright City (2 ½ miles west)
White Way Camp.....Warrenton (1 mile east).
Oak Lawn Camping Ground.....Warrenton.
Sunset Camp.....Warrenton (2 ½ miles west).
Log Cabin Camp.....Danville.
Living Spring Camp.....Mineola (¾-mile west).
Cozy Tourist Camp.....Columbia.
All States Tourist Camp.....Columbia.
Bells Lake Tourist Camp.....Columbia (13 miles west).
Franks & Bills Tourist Camp.....Boonville (3 miles east).
Dew Drop Inn Tourist Camp.....Boonville (10 mlies west).
Floral Harbor Tourist Camp.....Boonville (12 miles west).
Grandview Station and Camp.....Boonville (14 miles west).
Gilbert's Tourist Camp.....Boonville (16 miles west).
Pipertown Tourist Camp.....Marshall Junction (4 miles east)
Oasis Station and Camp.....Marshall Junction.
Midway Tourist Camp.....Sweet Springs.
Motor Inn Camp.....Sweet Springs.
Dirck's Cabins.....Sweet Springs.
Concordia Tourist Camp.....Concordia.
Shady Rest Camp.....Concordia.

Pine Ridge Camp	Concordia (1 mile west).
Fortyville Camp	Mayview.
Oliver's Tourist Camp	Higginsville Junction.
Lake Venita-on-the-Highway Camp	Odessa.
U-Need-A Camp	Bates City.
Camp Falls	Highway 40 and Raytown Rd., Jackson Co.
Sni-A-Bar Inn Tourist Camp	Highway 40 and Lees Summit Rd., Jackson Co.
Wide-Awake Inn Tourist Camp	East of Blue Ridge, Jackson Co.
Ideal Tourist Camp	Lees Summit.
U-Smile Camp	East of Kansas City.
Mountain Side Camp	East of Kansas City.
Old Dutch Mill No. 2 Tourist Camp	East of Kansas City.

U. S. Highway No. 50

Marshall Tourist Camp	Webster Groves.
Kirkwood Tourist Camp	Kirkwood.
Weidner Tourist Hotel	Manchester.
Des Peres Tourist Camp	Des Peres.
Jack's Tourist Camp	Des Peres.
Ballwin Hotel	Ballwin.
Phillips, Mrs. E., Tourist Rooms	Rock Hill.
Big Chief Highway Hotel	Pond.
Pond Hotel	Pond.
Jefferson City Tourist Camp	1800 East McCarty St., Jefferson City.
Hill Top Tourist Camp	Warrensburg.
Warrensburg City Camp	Warrensburg.
Always Inn Tourist Camp	Warrensburg (14 miles west).
Smile 'N Station and Camp	Knobtown.
Port Sunlight Tourist Camp	East of Kansas City.

U. S. Highway No. 54

Champ Clark Tourist Camp	Louisiana.
Camp Niangua (Y.M.C.A.)	Linn Creek (7 miles south).
Tourist Court	Nevada.
Radio Springs Park	Nevada.

U. S. Highway No. 60

Baldridge Service Station and Camp	Willow Springs (3 miles east).
East End Tourist Camp	Mountain Grove.
West End Tourist Camp	Mountain Grove.
Joy's Cottage Camp	Norwood.
Kerr's Cottage Camp	Seymour.
Dean's Camp	Seymour.
Camp Cody	Rogersville.
Galloway Tourist Camp	Galloway.
Half-A-Hill Tea House Resort and Camp	Springfield (6 miles south).
Blue Moon Tourist Camp	Springfield.
Log Cabin Camp	Springfield.
Turner's Service Station and Camp	Springfield.

U. S. Highway No. 61

Shaw's Tourist Camp	2927 St. Mary's, Hannibal.
Avery, J. E., Tourist Hotel	Pattonville.

Evening Star Tourist Camp.....Pattonville.
Smith Brothers Tourist Camp.....7500 St. Charles Rd., St. Louis County.
Artesian Park.....Herculaneum
Oakhaven Tourist Camp.....Bonne Terre (3 miles north).
Heck's Camp.....Desloge.
Big Elm Camp.....Flat River.
Happy Hollow Camp.....Farmington.
Farmington Tourist Camp.....Farmington.
White House Inn Tourist Camp.....Fredericktown (5 miles south).
Buchanan's Tourist Camp.....Sikeston.

U. S. Highway No. 63

Sunnyside Camp.....Macon.
El-Hogar Tourist Camp.....Moberly.
Urbandale View Tourist Camp.....Moberly (2 miles south).
All States Camp.....Columbia.
Elkhurst Tourist Camp.....Columbia (10 miles south).
Jefferson City Tourist Camp.....1800 East McCarty St., Jefferson City.
James Brothers Resort.....Vienna.
Fennessy Tourist Camp.....Vienna.
Hickmann, Mrs. T. E., Camp.....Vichy.
Schuman's Cottage City.....Rolla.
Baldridge Service Station and Camp....Willow Springs (3 miles east).
Midway Tourist Camp.....West Plains (5 miles north).

U. S. Highway No. 65

Beacon Tourist Camp.....Chillicothe.
Oasis Service Station and Camp.....Marshall Junction.
I-No-U Camp.....Sedalia.
Cream City Camp.....Springfield.
Blue Moon Camp.....Springfield.
Galloway Tourist Camp.....Galloway.
Lone Maple Camp.....Highlandville.
Finley River Camp.....Ozark.
Pierce Pennant Station.....Ozark.
Old Spanish Cave.....Reeds Spring.
Old Camp Ground.....Branson (3 miles north).
Bee Creek Camp.....Branson (2 miles north).
Camp Roark.....Branson.
Sharp's Lakeside Cabin Camp.....Branson.
Allendale Tourist Camp.....Branson.
Sammy Lane Park.....Branson.
Y. M. C. A. State Camp.....Hollister (½-mile north).
Sleepy Hollow Camp.....Hollister.
Nibbler's Barbecue Stand and Camp....Hollister.
Valley View Camp.....Hollister.

U. S. Highway No. 66

Marshall Tourist Camp.....Webster Groves.
Kirkwood Tourist Camp.....Kirkwood.
Weidener Tourist Hotel.....Manchester.
Des Peres Tourist Camp.....Des Peres.
Jack's Tourist Camp.....Des Peres.
Ballwin Hotel.....Ballwin.

Phillips, Mrs. E., Tourist Rooms	Rock Hill.
Big Chief Highway Hotel	Pond.
Pond Hotel	Pond.
Schuman's Cottage City	Rolla.
Duck Inn Camp	Rolla.
Arlington Heights	Arlington.
Arlington Tourist Camp	Arlington.
Graham's Resort	Devil's Elbow.
Hiawatha Lodge	Devil's Elbow.
Cedar Lodge	Hooker.
Bacon's Camp	Lebanon.
Camp Joy	Lebanon.
Top of the Ozarks Camp	Lebanon.
Midway Tourist Camp	Lebanon (12 miles north).
Harris Tourist Camp	Conway.
Jimmie O'Brien's Place	Marshfield (8 miles east).
Philpott Tourist Camp	Marshfield.
Davison's Tourist Camp	Marshfield.
Lurvey's Tourist Camp	Strafford (4 miles east).
Morris Service Station and Camp	Strafford.
Edel Camp	Strafford.
Stacy Camp	Springfield.
White City Tourist Park	Springfield.
Karstien Camp	Springfield.
Herndon Camp	Springfield.
Cozy Court Camp	Springfield.
Kar-A-Tex Camp	Springfield.
Hayes Service Station and Camp	Springfield.
Scott's Camp	Springfield.
Woody Service Station and Camp	Springfield.
Lurvey's Camp	Springfield.
Wise Camp	Springfield.
Log Cabin Service Station and Camp	Springfield.
De Luxe Camp	Springfield.
Rainbow Garden	1400 College St., Springfield.
Lilley Spanish Camp	Springfield (2 miles west).
Pleasant View Camp	Springfield (4 miles west).
Red Bird Motor Camp	Springfield (4 miles west).
Camp Rose	Springfield (12 miles west).
Gay Parita Camp	Halltown (3 miles west).
Tip Top Tourist Camp	Miller.
Heatonville Camp	Miller.
Maple Grove Camp	Miller.
Red, White and Blue Camp	Miller.
Cozy Nest Cabins	Phelps.
Log City Camp	Bowers Mill.
Shady Side Camp	Bowers Mill.
White Oak Camp	Avilla (1 mile east).
Shady Grove Tourist Camp	Carthage (7 miles east).
Plain View Camp	Carthage.
Taylor Park Tourist Camp	Carthage (1 mile west).
Idle-A-While Tourist Camp	Carthage (5 miles west).
Lakeside Inn Tourist Camp	Carterville (2 miles east).
Red Cabin Camp	Carterville.
Linger Longer Camp	Webb City.

Cottage Inn Camp.....Joplin.
Marathon Tourist Camp.....Joplin.
De Luxe Tourist Camp.....704 Connor St., Joplin.
Warren Tourist Camp.....630 McKinley St., Joplin.
Lapland Inn Tourist Camp.....Mo.-Kan. line.

U. S. Highway No. 70.

Arcadia Mountain Resort.....Arcadia (2½ miles south).
Mueller's Arcadia Lodge Resort.....Arcadia (3 miles south).
Camp Rankin (Boy Scouts).....Roselle.

U. S. Highway No. 71

Star Cottage Camp.....22nd and Garfield, St. Joseph.
Old Dutch Mill Camp.....Nashua.
Johnson's Picnic Park.....Holmes Park.
Phillip's Camp.....North Kansas City.
Lee Erb's Tourist Camp.....Hickman Mills.
Pates Tourist Camp.....Hickman Mills.
Davis Brothers Tourist Camp.....Harrisonville.
Maplewood Cabin Camp.....Sheldon.
Taylor Park.....Carthage (1 mile west).
Idle-A-While Camp.....Carthage (5 miles west).
Linger Longer Camp.....Webb City.
Cottage Inn Camp.....Joplin.
Marathon Tourist Camp.....Joplin.
Powell's Camp.....Neosho (8 miles north).
Neosho Tourist Camp.....Neosho.
Ginger Blue Resort.....Lanagan (1½ miles south).

State Highway No. 76

Shadow Rock Camp.....Forsyth.
White Swan Camp.....Forsyth.
Shepherd of the Hills Estate.....Forsyth (2 miles west).

State Highway No. 78

Y. M. C. A. Camp.....Forsyth.

State Highway No. 84

Dixie Park.....Kennett.

State Highway No. 90.

Camp Fallis.....Noel.

TOURIST CAMPS AND RESORTS NOT ON STATE AND U. S. HIGHWAYS

Barry County

Roaring River State Park.....Cassville (9 miles southeast)
Camp Brinton (Boy Scouts).....Agency

Buchanan County

St. Joseph Municipal Tourist Camp.....St. Joseph.

Camden County

Camp Carry-On (Girls).....Linn Creek (8 miles south).
Ha Ha Tonka Resort.....Ha Ha Tonka.

Crawford County

Fox Springs Lodge.....Cuba.
Idlewild.....Cuba.

Grundy County

Moberly Park.....Trenton.

Jasper County

La Barr Tourist Camp.....Fourth and Schifferdecker, Joplin.
Lakeside Park.....Carthage.

Jefferson County

Camp Cedarledge (Girl Scouts).....Pevely (5 miles north).
Camp Montebello (Y.W.C.A.).....Kimmswick.

McDonald County

Bosky Dell Resort.....Lanagan.
Camp Mikanakawa (Boy Scouts).....Noel.
Riverside Park.....Noel.
Slabsides.....Noel.

Maries County

Fenn's Resort.....Vienna.

Monroe County

Camp Monroe.....Monroe City.

Morgan County

Camp Gravois (Y.M.C.A.).....Versailles (5½ miles south).

Newton County

Arch Tourist Camp.....Neosho.
Morse Park.....Neosho.
Nih-Ka-Ga-Ha (Boy Scouts).....Newton County.
Redding's Mill Resort.....Joplin.

Phelps County

Adams, W. O., Resort.....Jerome.
Andres', J. Tilden, Resort.....Jerome.
Garey's Resort.....Jerome.
Hellweg's Resort.....Jerome.
McCarty's Cottages.....Jerome.
Millaway's Half-A-Hill Resort.....Jerome.
Sugar Tree Club.....Rolla.
Woodlands, The.....Jerome.

St. Charles County

Luessville Grove.....Portage des Sioux.
Weber Lake.....Portage des Sioux.

Platte County

Camp Clara (Y.W.C.A.) ..... Rushville.
Clearwater Beach ..... Rushville.
Crystal Beach ..... Rushville.
Keene Camp ..... Rushville.
Merrill's Camp ..... Rushville.
Myer's Camp ..... Rushville.
Stein Camp ..... Rushville.

Pulaski County

Baker Hotel ..... Waynesville.
Pippin Place ..... Waynesville.

St. Louis County

Cross Roads Inn ..... Castlewood
Kieffer's Beach ..... Kirkwood.
Minnie Ha Ha Beach ..... Fenton.

Stone County

Ramblers, The ..... Galena.

Taney County

Bardes Cottages ..... Taneycomo.
Brookside Cottages ..... Taneycomo.
Call's Hotel ..... Taneycomo.
Camp Ideal ..... Hollister (1½ miles south).
Camp Leale (Girls) ..... Taneycome (1 mile west).
Camp Ponca ..... Branson (1 mile west).
Captain Bill's Hotel ..... Taneycomo.
Casey's Cottages ..... Taneycomo.
Cedar Crest Camp ..... Hollister (2¾ miles south).
Cliff House ..... Powersite.
Crystal Cottages ..... Taneycomo.
Dunham's Cottages ..... Taneycomo.
Electric Park ..... Ozark Beach.
Hooper's Cottages ..... Taneycomo.
Hotel Rockaway ..... Taneycomo.
Hotel Taneycomo ..... Taneycomo.
Izaak Walton Camp ..... Branson (2 miles north).
Kickapoo Kamp (Girls) ..... Branson (2 miles north).
Kohler's Resort ..... Hollister.
Ozark Acacia Club ..... Hollister (2 miles south).
Ozark Beach Resort ..... Ozark Beach.
Parker Apartments ..... Taneycomo.
Rockaway Beach Pavilion ..... Taneycomo.
School of the Ozarks ..... Hollister (1½ miles south).
Shoreacres Resort ..... Hollister.
Sunset Inn ..... Branson (5½ miles northeast).
Taneycomo Highlands ..... Branson (2½ miles north).
Taneycomo Park ..... Branson (4 miles northeast).

MISSOURI WATER AND SEWERAGE CONFERENCE

CERTAIN PROBLEMS CONCERNING SATISFACTORY TREATMENT OF MUNICIPAL SEWAGE

The majority of the difficulties which cities in this state have experienced with sewage disposal has resulted from three causes—lack of care in the operation of the plant, insufficient treatment of the sewage, and poor design of sewage treatment plants. The first cause can be eliminated very simply by replacing an incompetent operator with a competent one. This is a problem concerned with securing a reasonably efficient city government and one that is responsible in many cases for unsatisfactory sewage treatment.

However, there are on record 27 cities in Missouri where difficulty with sewage disposal is the result of insufficient treatment. In 16 cases no treatment is provided, and in 11 cases the treatment works are so deficient that even with the best of operation they would not produce satisfactory results. Many of the plants in the state employ only Imhoff tanks or spetic tanks of the Cameron type for the purpose of securing simply primary treatment. The heavier organic matter which will settle out readily is removed by this method, and the remainder of the organic matter, being in finely divided suspension or in solution, passes out in the effluent. Imhoff tanks are more efficient in removing suspended organic matter than Cameron septic tanks, but even the best designed and operated Imhoff tank removes only about 40 per cent of the total organic matter in sewage. The remaining 60 per cent is not stable and requires oxygen for its stabilization. This oxygen must come from the stream which receives the tank effluent, and since the amount of oxygen which water can hold in solution is limited, there is a limit to the amount of sewage which a stream can receive without entirely depleting its oxygen supply. If the oxygen supply is reduced to a very low figure, or is entirely depleted, a nuisance will occur in the stream because of odors, unsightly appearance, and death of fish. In certain cases where the stream below a sewer outlet is used for a city water supply, the more important problem of bacterial contamination or load must be considered. Fortunately, there are few cases in Missouri where the smaller rivers used for public water supplies are subject to sewage contamination.

If the receiving stream for a city's sewage does not provide sufficient dilution for sewage which has received only primary treatment, secondary treatment and possibly disinfection must be resorted to. The purpose of secondary treatment is to oxidize

the organic matter remaining in the sewage after primary treatment and thus to stabilize it and largely satisfy its oxygen demand before being discharged into a water course. This oxidation is secured by means of filters of various types, or by a method known as the activated sludge process. If secondary treatment is provided and properly applied, the effluent can be discharged into a small stream without creating a nuisance.

The provision for only primary treatment was perhaps justified at the time many sewage treatment plants were built. When a sewerage system is first constructed, the flow of sewage is small and adequate dilution is often provided. After a period of from five to ten years, the majority of the connections are made and the flow is increased to a point where primary treatment is no longer sufficient. Every city which is operating a sewage treatment plant should make periodical inspections of the stream which receives the effluent and, if possible, simple tests on samples from this stream below the plant outlet. If additional treatment is necessary, immediate steps should be taken to provide it, since, unless this is done, trouble with landowners downstream from the plant will inevitably result. It is certainly wiser to construct an addition to a sewage treatment plant which will yield permanent results than it is to pay money for damages and have nothing to show for it except a canceled check.

When a problem involving sewage treatment arises, it should first be recognized that this is a matter demanding expert study and advice for its solution. Only a well qualified engineer should be employed by the city to study the problem and advise relative to the most satisfactory and economical solution. Unfortunately, a city frequently underestimates the value of paying a fair price for engineering service and demanding a careful and painstaking preliminary engineering study before recommendations are submitted. When a sewer system is already in existence, the State Board of Health now requires that sufficient information regarding the quantity of flow and strength of sewage be secured as a basis for the design of sewage treatment plants.

A few dollars spent for preliminary investigations will frequently save several thousand spent for inadequate treatment works. The services of an engineer qualified for this work, like any other expert service, must be paid for, and, on the other hand, the city gets about the kind of service in the long run that it is willing to pay for.

Therefore, choose your engineer on the basis of his qualifications and not his fee. The design of sewage treatment works is a task that particularly demands skill and considerable preliminary investigation in order to secure the desired results most economically.—H. M. B.

NOTES—MISSOURI WATER AND SEWERAGE CONFERENCE

Plans for an extension to the sewer system at Vandalia have been submitted for examination and approval.

Plans for the construction of a sewage treatment plant at Columbia have been submitted and approved.

MENTAL HYGIENE

Contributed by Mrs. M. P. Overholser, Chairman Mental Hygiene, Missouri Association of Parents and Teachers

THE MIDDLE ONE

"The second child, for a time at least, will enjoy some of the advantages of being the baby of the family. It is the favorite for a time because it is the youngest, a love right which comes next in importance to being the eldest. It is one of the especial positions in the family, and one which is too well-recognized as a vantage-point to need detailed description until we examine some of its less well-recognized aspects later on. But it may be that the second child is called upon to abdicate this proud standing when another baby adds a third to the family group.

"*****Of course, the middle one has also gone through the stage of being the baby for a period long or short. The termination of this section of life may be relinquished with regret or hailed with delight, at least consciously. To the child, with whom this idea of being 'the baby' is connected with that of inferiority brought home by older brothers and sisters who adopt this attitude as a compensation for their own dethronement in the past, it will become at first a matter for rejoicing to be the baby no longer, but it will be equally determined to keep this baby duly in its place as its own inferior, which theory becomes greatly upset if the parents insist upon raising the baby to the same status as itself and allowing it to share carefully guarded privileges, such as they are, without waiting to earn them by growing up."—From "Difficulties in Child Development," by Mary Chadwick.

MONTHLY PROGRESS REPORT—STANDARD MILK ORDINANCE CITIES

The table below indicates the ratings made by the State Board of Health on Standard Milk Ordinance cities during July. For the purpose of comparison, the previous milk ratings of the cities are also shown:

City		Date	Retail raw milk	Raw milk to plant	Pasteurized milk	Enforcement
Hamilton	Previous rating	10–28–29	54	None sold	None sold	None made.
	Last rating	7– 9–30	75	None sold	None sold	70
St. Joseph	Previous rating	11–16–29	71	62	62	65
	Last rating	7– 8–30	86	81	96	90
Kirkwood	Previous rating	11–25–29	84	None sold	None sold	None made.
	Last rating	7– 1–30	94	None sold	None sold	90
Webster Groves	Previous rating	11–27–29	77	None sold	None sold	None made.
	Last rating	7– 1–30	88	None sold	None sold	90
Brentwood	Previous rating	.....	.....	None sold	None sold	None made.
	Last rating	7– 1–30	81	None sold	None sold	90
Hannibal	Previous rating	11– 5–29	92	88	93	98
	Last rating	6–28–30	92	86	96	91
Independence	Previous rating	3– 5–30	89	69	92	None made.
	Last rating	6–23–30	96	85	97	85
Ferguson	Previous rating	11–29–30	85	None sold	None sold	None made.
	Last rating	7– 2–30	96	None sold	None sold	90
Joplin	Previous rating	9–19–29	92	83	78	91
	Last rating	6–12–30	93	86	86	84
Springfield	Previous rating	2–6–30	90	79	84	77
	Last rating	6–6–30	86	72	89	72

OF PUBLIC HEALTH INTEREST

Dr. Coogle of the United States Public Health Service, who is stationed at Memphis, Tennessee, and assigned to malaria control work, visited the offices of the State Board of Health of Missouri in connection with the malaria control work which is being done in Southeast Missouri.

Observers report a remarkable improvement in sanitary conditions in Miller County near the site of the Bagnell Dam project since the establishment of the full-time county health unit under the direction of Dr. E. K. Musson. It is also worthy of note that the number of cases of contagion reported in the county is very much lower than the number reported in the period just prior to the establishment of this unit and Miller County is to be congratulated on the forward step they have taken in conserving the health of the residents of the county.

Surgeon Paul Mossman of the United States Public Health Service, who has been in charge of the Trachoma Hospital at Rolla, Missouri, which is maintained jointly by the United States Public Health Service and the State Board of Health of Missouri, has been ordered to New Mexico where he will have supervision of trachoma prevention work among the Indians. Past Assistant Surgeon Rice of the United States Public Health Service will be Dr. Mossman's successor as medical officer in charge of the Missouri Trachoma Hospital.

The Division of Cosmetology and Hairdressing of the State Board of Health which was established by the last legislature, conducted its first oral and practical examination for beauty parlor operators in St. Louis on July 21 and 22. Ninety-two applicants took the examinations. The examinations for applicants residing in the western part of the state will be held in Kansas City July 28 and 29.

Dr. I. B. Krause of the State Board of Health recently visited Atchison County in the interests of a full-time county health unit. Upon his return, he inspected the full-time county health units in Buchanan and Nodaway counties.

A modern water or sewage purification plant requires competent local supervision. Without it such an installation becomes worse than useless because a false sense of security is engendered among those whose health may depend upon an uninfected effluent.—N. Y. Health News.

COMPARISON OF COMMUNICABLE DISEASES REPORTED FOR THE MONTHS OF JUNE, 1929 AND 1930.

Disease.	1929	1930
Chickenpox	183	196
Diphtheria	211	97
Epidemic Sore Throat	5	6
Erysipelas	1	0
Influenza	9	8
Malaria	35	52
Measles	492	315
Meningitis	61	24
Mumps	78	118
Ophthalmia	5	0
Pellagra	0	1
Pneumonia	36	38
Poliomeylitis	3	3
Rabies in animals	17	7
Scarlet fever	213	352
Smallpox	154	196
Tetanus	2	1
Trachoma	25	136
Tuberculosis	303	161
Typhoid Fever	61	41
Whooping cough	562	124
Undulant fever	0	18